

OPERATOR MANUAL

Includes Safety, Service and Replacement Part Information

660 DIG-R-MOBILE®

Form: GOM6309901
Version 1.3

Do not discard this manual. Before operation, read and comprehend its contents. Keep it readily available for reference during operation or when performing any service related function. When ordering replacement parts, please supply the following information: model number, serial number and part number.

For customer service assistance, telephone 800.533.0524, +507.451.5510. Our Customer Service telefax number is 877.344.4375, +507.451.5511. There is no charge for customer service activities.

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EQUIPMENT COMPANY

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*Manufacturers of light construction
equipment*

Congratulations on your decision to purchase a General light construction product. From our humble beginnings in 1955, it has been a continuing objective of General Equipment Company to manufacture equipment that delivers uncompromising value, service life and investment return. Because of this continuous commitment for excellence, many products bearing the General name actually set the standards by which competitive products are judged.

When you purchased this product, you also gained access to a team of dedicated and knowledgeable support personnel that stand willing and ready to provide field support assistance. Our team of sales representatives and inhouse factory personnel are available to ensure that each General product delivers the intended performance, value and investment return. Our personnel can readily answer your concerns or questions regarding proper applications, service requirements and warranty related problems.

General Equipment Company places great emphasis upon not only product performance, but also on product safety. It is important to remember that this product will only be as safe as the operators which utilize it. It just makes good, common sense to take the time to read and fully understand the contents of this manual before attempting to utilize this product in service. If you ever do have any questions or concerns about this product, please feel free to contact our Customer Service Department at the telephone numbers listed below for assistance.

If there is anything that I can do to assist your efforts when utilizing this product, please do not hesitate to contact me. For assistance after normal business hours, telephone me at 507.451.9409 or 507.363.1033. If I am not immediately available, I will attempt to return your call as soon as possible.

Sincerely,

GENERAL EQUIPMENT COMPANY

A handwritten signature in black ink, appearing to read "Dennis Von Ruden", written in a cursive style.

Dennis Von Ruden
President

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Know what's below.
Call before you dig.



Notice to Operators

IF YOU CAN NOT READ OR DO NOT FULLY UNDERSTAND THE CONTENTS OF THIS MANUAL, PLEASE CONTACT THE FACTORY FOR PROPER ASSISTANCE BEFORE ATTEMPTING TO OPERATE THIS PRODUCT.

SI TU NO PUEDES LE'ER O NO COMPRENDES EL CONTENIDO DE ESTE MANUAL FAVOR DE PONERSE EN CONTACTO CON LA FABRICA PARA ASISTENCIA- A PROPIA ANTES DE INTENTAR PARA OPERAR ESTE PRODUCTO.

SOLLTEN SIE DIESE GEBRAUCHSANWEISUNG NICHT LESEN KOENNEN ODER ES NICHT VOLLKOMMEN VERSTEHEN, WENDEN SIE SICH BITTE AN DEN HERSTELLER FUER RICHTIGE HILFE EHE SIE VERSUCHEN DIESES PRODUKT ZU OPERIEREN.

SI VOUS NE LISEZ OU NE COMPRENDRE ENTIEREMENT LES MATIERES DE CE MANUEL, S'IL VOUS PLAIT, CONTACTEZ L'USINE POUR L'ASSISTANCE APPROPRIEE AVANT D'UTILISER LE PRODUIT.

DANGER

DANGER indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.

WARNING

WARNING indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.

CAUTION

CAUTION indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

These safety alert symbols identify important safety messages in this manual. When you see these symbols, be alert to the possibility of personal injury and carefully read the message that follows.

Do not allow anyone to operate the 660 DIG-R-MOBILE, without first reading this Operator Manual and becoming familiar with its operation. The manufacturer of this 660 DIG-R-MOBILE has gone to great extremes to provide the owner(s) and/or operator(s) with the finest equipment available for its intended job function of digging vertical holes in unconsolidated and specific semiconsolidated earth formations. Yet, the possibility exists that the 660 DIG-R-MOBILE, can be utilized in and/or subjected to job applications not perceived and/or anticipated by the manufacturer. Such misuse and/or misapplication of the 660 DIG-R-MOBILE can lead to the possibility of serious damage, injury or even death. It is the responsibility of the owner(s) and/or operator(s) to determine that the 660 DIG-R-MOBILE is being utilized and/or operated within the scope of its intended job function. It is the responsibility of the owner(s) and/or operator(s) to establish, monitor and constantly upgrade all safety programs and/or practices utilized in and for the operation of the 660 DIG-R-MOBILE. The purpose of such programs is to provide for owner(s) and/or operator(s) safety. Operators must be instructed to recognize and avoid unsafe conditions associated with their work (OSHA 29 CFR 1926.21 (b)(2)) and/or applicable updated revisions. It is the responsibility of the owner(s) and/or operator(s) to determine that no modifications and/or alterations have been made to the 660 DIG-R-MOBILE. Modifications and/or alterations can lead to the possibility of serious damage, injury or even death. It is the responsibility of the owner(s) and/or operator(s) to make this Operator Manual available for consultation during all phases of operation. Refer to OSHA 2207 and/or applicable updated revisions which contains all OSHA job safety and health rules and regulations (1926 and 1910) covering construction.

Operator Instructional Data Sheet

The following undersigned operators of the 660 DIG-R-MOBILE described and/or pertaining to this Operator Manual have received formal safety and operational information/instruction from the undersigned owner(s)/instructor(s) in accordance to OSHA 29 CFR 1926.21 (b)(2) and/or applicable updated revisions pertaining to, but not necessarily limited to the:

- 1) **READING, COMPREHENSION AND ACKNOWLEDGEMENT OF THE MATERIAL COMPRISING THE ENTIRE CONTENTS OF THE APPLICABLE OPERATOR MANUAL AND APPLICABLE SAFETY AND OPERATIONAL INFORMATION VIDEO TAPE FOR THE 660 DIG-R-MOBILE.**
- 2) **FORMALIZED OPERATOR SAFETY PROGRAM TO BE DEvised BY THE OWNER OF THE 660 DIG-R-MOBILE IN CONJUNCTION WITH THE CONTENTS OF THE APPLICABLE OPERATOR MANUAL AND THE SAFETY AND APPLICABLE OPERATIONAL INFORMATION VIDEO TAPE FOR THE 660 DIG-R-MOBILE.**
- 3) **OSHA RULES AND REGULATIONS RESEARCHED FOR AND/OR BY THE OWNER OF THE 660 DIG-R-MOBILE AND DEEMED APPLICABLE TO THE SAFE AND PROPER USE AND/OR OPERATION OF THE 660 DIG-R-MOBILE FOR ANY SPECIFIC JOB APPLICATION.**
- 4) **LOCAL LAWS, REGULATIONS AND CUSTOMS RESEARCHED FOR AND/OR BY THE OWNER OF THE 660 DIG-R-MOBILE AND DEEMED APPLICABLE TO THE SAFE AND PROPER USE AND/OR OPERATION OF THE 660 DIG-R-MOBILE FOR ANY SPECIFIC JOB APPLICATION.**
- 5) **FORMALIZED MAINTENANCE PROGRAM FOR THE 660 DIG-R-MOBILE TO BE DEvised BY THE OWNER OF THE 660 DIG-R-MOBILE IN ACCORDANCE WITH, BUT NOT NECESSARILY LIMITED TO, THE SPECIFICATIONS, GUIDELINES AND OPERATIONAL INFORMATION CONTAINED IN THE APPLICABLE OPERATOR MANUAL.**
- 6) **COMPREHENSIVE OPERATIONAL INSTRUCTIONS FOR THE CORRECT AND PROPER USE OF THE 660 DIG-R-MOBILE AS PER THE CONTENTS OF THE APPLICABLE OPERATOR MANUAL AND THE APPLICABLE SAFETY AND OPERATIONAL INFORMATION VIDEO TAPE.**

_____ Operator	_____ Owner/Instructor	_____ Date
_____ Operator	_____ Owner/Instructor	_____ Date
_____ Operator	_____ Owner/Instructor	_____ Date
_____ Operator	_____ Owner/Instructor	_____ Date

NOTE: INSERT A COPY OF THIS PAGE WITHIN OPERATOR'S MANUAL IF SPACE FOR ADDITIONAL OPERATORS IS REQUIRED.

Safety Precautions

THE FOLLOWING SAFETY PRECAUTIONS PROVIDE SOME COMMON SENSE GUIDES TO PROMOTE SAFETY AND EFFICIENCY FOR THE 660 DIG-R-MOBILE. NO WARRANTY, GUARANTEE OR REPRESENTATION IS MADE BY THE MANUFACTURER AS TO THE ABSOLUTE CORRECTNESS OR SUFFICIENCY OF ANY INFORMATION OR STATEMENT. THESE SAFETY PRECAUTIONS ARE INTENDED TO DEAL PRINCIPALLY WITH COMMON PRACTICES AND CONDITIONS ENCOUNTERED IN THE USE OF THE DIG-R-MOBILE AND ARE NOT INTENDED TO BE ALL INCLUSIVE. PROPER LEVELS OF OPERATOR EXPERIENCE, SKILL AND COMMON SENSE ARE ESSENTIAL FOR SAFE AND EFFICIENT OPERATION.



DANGER

THE ENGINE EXHAUST FROM THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM. THIS STATEMENT IS MADE IN COMPLIANCE TO CALIFORNIA PROPOSITION 65.



DANGER

INCORRECT USE OF THE DIG-R-MOBILE CAN RESULT IN PROPERTY DAMAGE, PERSONAL INJURY OR EVEN DEATH. TO REDUCE THIS POSSIBILITY, GIVE COMPLETE AND UNDIVIDED ATTENTION TO THE JOB AT HAND AND FOLLOW THESE SAFETY PRECAUTIONS:

PREPARATION

1) The 660 DIG-R-MOBILE is a specialized type of powered equipment, designed for a specific job function and requires adequate and thorough instruction BEFORE it is operated. The size, power, complexity and operating characteristics of this type of powered equipment would dictate that each operator must receive adequate, professional instruction regarding the proper operation of the DIG-R-MOBILE before being allowed to utilize it. BEFORE attempting to utilize this DIG-R-MOBILE, read the Operator Manual, view the applicable Safety and Operational Information Video Tape and read the material supplied by the engine manufacturer to familiarize each operator with its correct operating procedures. Avoid the urge not to take the necessary time to read the Operator Manual before operating the DIG-R-MOBILE.

DO NOT OPERATE THE DIG-R-MOBILE UNTIL EACH OPERATOR COMPLETELY COMPREHENDS THE CONTENTS OF THIS MANUAL, THE APPLICABLE SAFETY AND OPERATIONAL INFORMATION VIDEO TAPE, APPLICABLE SUPPLEMENTAL INFORMATION AND THE INFORMATION SUPPLIED BY THE ENGINE MANUFACTURER.

2) Develop a comprehensive program for the safe operation of the DIG-R-MOBILE by its owner(s) and/or operator(s). Such a program will include, but is not limited to: instructional requirements for operation, applicable OSHA requirements, local laws and regulations, job site safety and a DIG-R-MOBILE maintenance program. Constantly examine and upgrade this program to guarantee owner(s) and/or operator(s) safety. Each operator must be fully instructed regarding the specifics of this safety program.

3) Determine that the DIG-R-MOBILE is in its original, factory configuration and has not been modified in any manner. Many modifications can result in potentially dangerous configurations that can lead to property damage and/or personal injury. If there are any questions about possible modifications made to the DIG-R-MOBILE, contact the Customer Service Department for specific information BEFORE utilization. There is no charge for this service.

4) Minors should never be allowed to operate the DIG-R-MOBILE. Bystanders, especially children and animals, should not be allowed in the area where the DIG-R-MOBILE is in use. The hole digging process can result in flying particles being emitted at high velocity and striking the operator and/or onlookers. This can lead to the possibility of property damage and/or personal injury. Keep all body parts; loose clothing, foreign objects and onlookers clear of the rotating auger and/or auger extensions.

5) Operators must be in proper physical condition, mental health and not under the influence of any substance (drugs, alcohol, etc.) which might impair vision, dexterity or judgment. Working with the DIG-R-MOBILE is strenuous. If you have any condition that might be aggravated by strenuous work, check with your doctor BEFORE operating the DIG-R-MOBILE. Guard against the possibility of back related injuries. Always lift the DIG-R-MOBILE with leg muscles and not with the back. Operators must be of adequate height so that for any given operating configuration, the operator handle remains below their shoulder sockets. Do not operate the DIG-R-MOBILE if this condition is not satisfied.

6) Lack of sleep, tiredness, or physical exhaustion can result in lower attention spans and be the cause of accidents and personal injury. When planning your work schedule, allow adequate time for work breaks.

7) Prolonged use of the DIG-R-MOBILE (or other, similar machines) exposes the operator to vibrations which may produce Whitefinger Disease (Raynaud's Phenomenon). This phenomenon reduces the hand's ability to feel and regulate temperature, produces numbness and burning sensations and may cause nerve and circulation damage and tissue necrosis. Antivibration systems do not guarantee that you will not sustain Whitefinger Disease. Therefore, continuous and regular users should closely monitor the condition of their hands and fingers. After each period of use, exercise to restore normal blood circulation. If any of the symptoms appear, seek medical advice immediately.

8) Clothing must be sturdy and snug fitting, but allow complete freedom of movement. Never wear loose fitting jackets, scarves, neckties, jewelry, flared or cuffed pants or anything that could become caught on controls or moving parts. Wear long pants to protect your legs. Protect your hands with heavy duty, nonslip gloves to improve your grip. Good footing is most important when operating the DIG-R-MOBILE. Wear sturdy boots with nonslip soles. Steel-toed safety shoes are highly recommended. Keep shoes properly laced. Never wear tennis shoes or other, similar type shoes that afford little or no protection. Wear an approved safety hard hat to protect the operator's head(s) where there is a danger of head injuries. Noise, generated by the engine of the DIG-R-MOBILE and the actual process itself, can damage your hearing. Wear approved sound barriers (ear plugs or ear muffs) to protect your hearing. Continuous and regular operators should have their hearing checked regularly.

9) Visually inspect the DIG-R-MOBILE, auger(s), auger extension(s), and accessories for damaged or worn parts. Inspect each auger for the proper screw bit and teeth. Check for loose and/or broken parts.

10) Determine that operator controls work freely, all safety devices are operative and information/safety decals are readable. Check to determine that the DIG-R-MOBILE and all related accessories are in good mechanical condition BEFORE utilization.

11) Visually inspect the wheel/tire assemblies for the following:

a) Both wheel/tire assemblies are of the same design, tread configuration and outside diameter. Variances in design configurations and/or outside diameter can directly affect towing stability.

b) The wheels are properly mounted to the hub assemblies with the inflation stem located on the side opposite of the hydraulic reservoir. An improper mounting configuration may not allow lug nuts to retain the wheels to the hub assemblies while towing the DIG-R-MOBILE behind a vehicle.

c) The proper amount of lug nuts (5) is properly torqued to each set of wheel hub assembly studs. An improper number of lug nuts may not secure the wheels to the hub assemblies while towing the DIG-R-MOBILE behind a vehicle.

d) The tire assemblies each are of proper condition without sidewall /tread cracks. Cracks can cause tire failure, resulting in property damage and/or personal injury.

e) The tire assemblies each have at least minimum legal tread depths. Improper tread depth can cause tire failure and/or affect towing stability. This occurrence can result in property damage and/or personal injury.

f) The tire assemblies each have inflation values within factory specifications. Improper inflation values can cause tire failure and/or affect towing stability. This occurrence can result in property damage and/or personal injury.

g) Wheel bearings have lubrication and preload values within factory specifications. Improper wheel bearing maintenance can cause bearing failure and/or affect towing stability. This occurrence can result in property damage and/or personal injury.

12) If the DIG-R-MOBILE is to be towed to and/or from the job site, visually inspect the tow bar assembly, including the hitch coupler assembly, attachment fittings, attachment pins, locking pin assemblies and related hardware. Replace any questionable component with a factory-approved replacement only.

13) Contact appropriate representatives to determine if/where electrical cables, gas lines and other hazardous items are buried under the work surface BEFORE utilization. The DIG-R-MOBILE and related accessories are not classified as being insulated. Contact with buried electrical cables, gas lines and other hazardous items can result in electrocution and/or an explosion.

14) Know how the controls operate. Know how to stop the engine quickly in an emergency. Always start the engine according to the instructions as outlined in this manual to minimize the possibility of unexpected or uncontrolled auger rotation. Unexpected auger rotation can cause loss of machine control, and the possibility of property damage and/or personal injury.

15) Never exceed the recommended capacities of the DIG-R-MOBILE. Refer to the Specifications section of this manual for more detailed information. Always utilize the correct auger and auger extension series designed for use with the DIG-R-MOBILE. Use of an incorrect auger or auger series can result in property damage and/or personal injury.

16) The DIG-R-MOBILE is powered by gasoline engines that produce Carbon Monoxide fumes during the combustion process. Carbon Monoxide fumes are poisonous. Breathing Carbon Monoxide fumes while operating the DIG-R-MOBILE can result in property damage and/or personal injury. The normal operation of the DIG-R-MOBILE is outdoors where the potential effects of Carbon Monoxide to the operators are minimized. If the DIG-R-MOBILE is operated in a closed area (indoors or outdoors), determine if supplemental ventilation is required to minimize the potential effects of Carbon Monoxide to the operators. Follow all current OSHA regulations pertaining to ventilation.

OPERATION

1) Give complete and undivided attention to the job at hand. Do not chew gum, smoke and/or use smokeless tobacco while utilizing the DIG-R-MOBILE. Do not attempt to eat and/or drink while utilizing the DIG-R-MOBILE. Determine that eyeglasses, hearing aid devices and other medical related devices are properly secured. Keep shoes properly laced. Use of the DIG-R-MOBILE is strenuous and causes fatigue. Help prevent the cause of an accident. Plan to take work breaks as required to help maintain proper mental and physical alertness.

2) The DIG-R-MOBILE is not sealed or insulated. Do not operate any DIG-R-MOBILE in an explosive atmosphere or near combustible materials. Refer to current OSHA rules and regulations.

3) Gasoline is an extremely flammable fuel. Use extreme caution when handling gasoline or mixing fuel. Always utilize UL, CSA or CE approved containers for the storage and transportation of fuel. Do not smoke or bring fire or flame near the fuel. Always shut off the engine and allow it to cool before refueling. Never remove the fuel tank filler cap while the engine is running. Never operate an engine without a fuel tank filler cap. Select bare ground for fueling and move at least 10 feet from the fueling spot before starting the engine. Wipe off any spilled fuel before starting the engine and check for leakage. If a fuel or oil leak is found, do not start or run the engine until the leak is fixed and the spillage has been wiped away. Take care not to get fuel or oil on your clothing. If this happens, change your clothing immediately. Before operating the DIG-R-MOBILE refer to the Specifications section of this manual for more detailed information regarding fuel and lubrication requirements.

4) The DIG-R-MOBILE is designed for use by one operator. Use of the Hole Digger by more than one operator can lead to confusion and loss of control, resulting in property damage and/or personal injury. Never operate the DIG-R-MOBILE with an improper number of operators. Such a configuration can result in property damage and/or personal injury. If it is felt that more than one person is required to furnish additional

"down pressure" to the auger, STOP and contact the Customer Service Department for specific operational and service/maintenance information. There is no charge for this service.

5) Do not operate the DIG-R-MOBILE with onlookers close by. Caution all onlookers to stand clear. The hole digging process can result in flying particles being emitted at high velocity and striking the operator and/or onlookers. This can result in property damage and/or personal injury. Keep all body parts, loose clothing and foreign objects clear of the rotating auger.

6) The handles located either side of the power unit are designed to provide a platform to assist maneuvering the DIG-R-MOBILE on the job site by additional personnel. If additional personnel are required to help maneuver the DIG-R-MOBILE, keep all body parts, clothing and foreign objects clear of the protective rubber guards to minimize pinch related concerns. Failure to observe pinch related concerns can result in property damage and/or personal injury. Do not operate the DIG-R-MOBILE without the rubber guards in proper place or with the guards in improper mechanical condition.

7) Do not utilize a shovel and/or foreign object to remove loose soil from around the hole area while the DIG-R-MOBILE is in use. Such a practice can result in the shovel and/or foreign object to become entrapped by the rotating auger, leading to property damage and/or personal injury.

8) Start the engine according to the instructions as outlined in the material supplied by the engine specific manufacturer to minimize the possibility of unexpected auger rotation. Unexpected auger rotation can result in the loss of machine control and the possibility of property damage and/or personal injury.

9) Start and operate the DIG-R-MOBILE only in a well-ventilated area. Carbon Monoxide fumes given off by an engine are poisonous. Breathing these fumes can result in property damage and/or personal injury. Operate the DIG-R-MOBILE only when/where visibility and light are adequate for the job at hand. Work carefully. Always hold the operator handle firmly with both hands. Wrap your fingers around the handle/directional control lever, keeping them cradled between your thumbs and fingers. Do not defeat the spring loaded, return to neutral feature of the directional control valve. Always determine the operator handle is in good condition and free of moisture, pitch, oil or grease. Wear gloves to improve your grip. Never leave the DIG-R-MOBILE running and unattended.

10) Stop the engine between each hole. Allowing the engine to remain operating between each hole substantially increases the potential for property damage and/or personal injury if the directional control lever is accidentally deployed. Special care must be exercised on slippery conditions and on difficult, uneven surfaces. Watch for cracks, high spots and other, surface irregularities. Keep proper footing and balance at all times. The normal use of this machine is on level surfaces. Other terrains can be dangerous and should be avoided. Only properly trained operators should attempt these techniques.

11) The DIG-R-MOBILE is designed for the auger to rotate clockwise into the ground when the right side of the directional control lever is depressed toward the operator. It is designed for the auger to rotate counterclockwise out of the ground when the left side of the directional control lever is depressed toward the operator. This is the factory designed operating configuration for the DIG-R-MOBILE. Non-factory designed operating configuration(s) will result in loss of machine control, property damage and personal injury. Contact the Customer Service Department for information relative to restoring the DIG-R-MOBILE to its original configuration BEFORE further utilization. There is no charge for this service.

12) Contact with a hot engine muffler and heat shield can cause property damage and/or personal injury. Remain clear of a hot engine muffler and heat shield. Do not over speed the engine by altering the governor setting or by disconnecting the engine governor. Serious damage to the engine and/or personal injury can result.

13) The DIG-R-MOBILE is powered by a gasoline engine that produces Carbon Monoxide fumes during the combustion process. Carbon Monoxide fumes are poisonous. Breathing Carbon Monoxide fumes while operating the DIG-R-MOBILE can result in property damage and/or personal injury. The normal operation of the DIG-R-MOBILE is outdoors where the potential effects of Carbon Monoxide to the operator are minimized. If the DIG-R-MOBILE is operated in a closed area (indoors or outdoors), determine if supplemental ventilation is required to minimize the potential effects of Carbon Monoxide to the operators. Follow all current OSHA regulations pertaining to ventilation.

14) Because this DIG-R-MOBILE is classified as a low cost, low horsepower, portable type machine, it is limited in the number of practical and/or suitable job applications. A particular job site, actual surface conditions, job specifications and operator skill/common sense may dictate that a different type of machine (with characteristics of higher purchase cost, being mounted to a carrier vehicle, with greater horsepower and less mobility), method and/or process be utilized to properly complete the job with the degree of efficiency and safety required. Contact the

Customer Service Department for specific information regarding suitable job applications, job site surface conditions and operator experience/skill/common sense recommendations for the DIG-R-MOBILE BEFORE utilization. There is no charge for this service.

16) Operation of the DIG-R-MOBILE engine produces noise. Check and follow all applicable noise regulations regarding levels and hours of operation.

17) Do not touch the engine spark plug or ignition wire while the engine is operating. Contact can result in property damage and/or personal injury.

MAINTENANCE, REPAIR AND STORAGE

1) Use only genuine, approved replacement parts and accessories for maintenance and repair. Use of parts and accessories manufactured by others can result in property damage and/or personal injury.

2) Follow the Service instructions as outlined in the appropriate section of this manual.

3) Always stop the engine, disconnect the spark plug wire and cycle the directional control lever BEFORE checking or working on the DIG-R-MOBILE.

4) Always properly maintain the DIG-R-MOBILE. Frequently check all fasteners and individual parts. Built in safety features are effective only if they are maintained in good working condition. Replace any questionable part or assembly with a genuine, factory approved, replacement part. Do not forsake proper maintenance for the price of a few replacement parts. Proper maintenance does not cost...it actually pays dividends. Do not attempt any maintenance repair work not described in this manual. Have such work performed at your dealer's service facility.

5) The pressure relief valves located in the hydraulic pump and directional control valve are factory tested and preset to given values. Do not alter or adjust these values with the purpose of increasing performance and/or productivity. Individual hydraulic components of the DIG-R-MOBILE are designed to function as a single system. Improper adjustments and/or modifications can result in property damage and/or personal injury.

6) Frequently check all hydraulic hose assemblies, hose connections, and individual hydraulic system components for wear and/or damage. Hydraulic hose assemblies can wear from normal use, nonuse and abuse. Wear patterns can be difficult to detect with sudden failure sometimes a reality. Follow current industry standards for the proper maintenance of all hydraulic components.

7) Determine the engine ignition switch and remote ignition ON/OFF switch are not damaged and allow for complete freedom of movement. This is necessary to allow them to perform their intended job functions. Do not operate the DIG-R-MOBILE with a damaged engine ignition switch and remote ON/OFF switch.

8) A worn or damaged engine muffler is a fire hazard and may cause loss of hearing. Check to see that the muffler is in good condition. If the muffler is equipped with a spark-arresting device, determine that it is in proper working condition at regular service intervals. Replace the spark-arresting device with an approved replacement if there is any question of its integrity. It is the responsibility of the owner(s) and/or operator(s) to provide for and properly maintain a USDA approved, spark arresting muffler in an operating area specified by law. Check with appropriate governing agencies for more specific information.

The DIG-R-MOBILE must not be operated if the muffler is faulty or has been removed. Do not operate the DIG-R-MOBILE if the muffler exhaust deflector is damaged or missing. Contact with a hot engine muffler can cause property damage and/or personal injury.

9) Maintain all safety and operation decals in proper condition. If any decal becomes damaged and/or unreadable, replace with a genuine, factory approved, replacement part only.

10) The DIG-R-MOBILE may utilize self-locking type hexagon head nuts to minimize the effects of vibration. Replace all self-locking hardware with genuine, factory approved, replacement parts only.

11) Consult the material supplied by the engine manufacturer for specific information relative to proper operational, lubrication and storage requirements.

12) Replace the auger teeth and screw bit when signs of excessive wear are seen. When such components are not replaced at proper intervals, excessive wear will occur at the boring head and auger flighting. The end result is an inverted cone configuration of the auger that usually requires complete replacement. FIGURE 1. Digging with augers that are past their useful service life or that have not been properly maintained can result in substandard productivity, excessive property damage and/or personal injury. Auger service life can be greatly extended with a consistent auger maintenance program.



FIGURE 1

Assembly

Open the shipping crate immediately upon receipt. Visually inspect the contents of the crate for freight damage and/or missing parts. If shipping damage is evident, contact the delivering carrier immediately to arrange for an inspection of the damage by their claims representative. Federal law requires that a claim be filed within a specified time period. If missing parts are detected, notify your dealer or contact the Customer Service Department for assistance in obtaining them.

Included in the shipment for all models of DIG-R-MOBILE should be the following:

- 1 each, main frame/reservoir assembly
- 1 each, operator control unit
- 2 each, wheel and tire assemblies
- 1 each, tow bar assembly, including adjustable coupler; 2 each, safety towing chains; installation/safety decals and 3 each, attachment pin assemblies
- 1 each, Operator Manual
- 1 each, applicable Safety/Operational Information CD
- 1 each, applicable engine manual
- 1 each, Final Inspection Form

REMOVING THE 660 DIG-R-MOBILE FROM THE SHIPPING BOX & PALLET

Open shipping carton immediately upon receipt. Remove DIG-R-MOBILE from carton. Visually inspect contents of carton for freight damage and/or missing parts. If shipping damage is evident, contact delivering carrier immediately to arrange for an inspection of damage by their claims representative. **DO NOT DESTROY OR DISCARD SHIPPING CARTON UNTIL INSTRUCTED BY AUTHORIZED REPRESENTATIVE OF CARRIER OR FACTORY.** If missing parts are detected, notify your dealer who will assist you in obtaining them.

Applications: All models

Tools Required:

- 1 each, slip pliers
- 1 each, cut off pliers



CAUTION

The 660 DIG-R-MOBILE is secured to the shipping pallet with steel banding straps held under tension. Releasing the strap tension by cutting can produce a random and sudden movement that can strike personnel. This occurrence can result in property damage and/or personal injury. Advise other personnel in the immediate area to remain at a safe distance from the shipping crate. Personnel cutting the steel banding straps should wear appropriate protective safety apparel including eyewear and gloves.

- 1) Lift the protective cardboard box top off the shipping pallet to expose the DIG-R-MOBILE.
- 2) Using the cut off pliers, cut and remove the banding which secures the tow bar assembly to the shipping pallet. Remove the tow bar.
- 3) Using the cut off pliers, cut and remove the banding which secures the power unit and operator control assembly to the shipping pallet. Remove the components, exercising care not to scratch or damage the paint.
- 4) Discard the shipping box, pallet and packing materials by appropriate disposal methods.

INSTALLING THE WHEEL/TIRE ASSEMBLIES TO THE POWER UNIT

Tools Required:

- 1 each, lug wrench with 3/4-inch (19 mm) socket
- 1 each, torque wrench, 660 inch pound (74 N.m.) capacity
- 1 each, lifting device of suitable capacity, configuration & stability
- 1 each, lifting sling of suitable capacity & configuration

Installing the wheel/tire assemblies to the wheel hubs will require the power unit to be raised and properly supported. The lifting bail assemblies located on both sides of the reservoir are intended for this purpose. FIGURE 2.



FIGURE 2

DANGER

BEFORE RAISING THE POWER UNIT, DETERMINE THE LIFTING DEVICE, LIFTING SLING AND ALL RELATED HARDWARE, ETC. ARE OF THE PROPER CAPACITY, STABILITY AND STRUCTURAL CAPACITY. FAILURE TO LIFT THE POWER UNIT WITH PROPER COMPONENTS OR WITH DEVICES IMPROPERLY CONNECTED CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

1) Lift the power unit according to proper procedures. Install a wheel/tire assembly to each wheel hub. Secure finger tight with the provided lug nuts. Install each nut with the beveled edge correctly positioned against the taper within each hole. FIGURE 3.



FIGURE 3

2) Wheel hub bearings are packed with the proper amount and type of lubrication grease and then adjusted at the factory for proper preload. The tire/wheel assembly should rotate freely. There should be slight drag but not excessive looseness. As the bearings and hub both become warm while towing, the metal expansion will create further tightness. Heat created by excessive friction can result in damage to the hub, axle shaft and bearings.

3) If it is decided that wheel bearing tension requires adjustment, proceed as follows:

a) Remove the dust cap from the hub. The cap can be best removed by utilizing a wide, flat screwdriver and hammer to impact and pry about the circumference of the lip.

b) Utilizing a suitable pliers, remove the cotter pin from the castellated axle nut.

c) Determine a suitable amount of lubrication grease is present in the wheel bearings. It is not necessary that the wheel hub cavity surrounding the bearings be completely filled with lubrication grease to deliver proper service life.

d) Using a suitable pliers, adjust the bearing tension to an acceptable value.

e) Reinstall the cotter pin. Rotate the wheel/tire assembly to determine the resulting bearing tension value. If the tension is found acceptable, reinstall the dust cap to the hub by utilizing a soft type hammer using light hammer blows to the circumference of the cap end. Sharp blows directly to the cap end will result in damage.

4) Lower the power unit to the floor according to proper procedures. Using the torque wrench, torque the lug nuts to 660 inch pounds (74 N.m.). This torque specification is for both lug nut and threaded stud threads that are clean and free of dirt and rust. Do not lubricate the threads with oil or grease. Torque the lug nuts in a star pattern, crossing over to opposite side of axle hub to next point each time.

FIGURE 4.



FIGURE 4



DANGER

IMPROPER LUG NUT TORQUING PROCEDURES CAN ALLOW THE WHEEL/TIRE ASSEMBLY TO BECOME SEPARATED FROM THE DIG-R-MOBILE WHILE TOWING OR DURING USE. THIS OCCURRENCE CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

INSTALLING THE OPERATOR CONTROL UNIT TO THE POWER UNIT

Tools Required:

- 1 each, 15/16-inch open-end wrench
- 1 each, grease gun with lithium type grease

Parts Required:

- 1 each, PN 660-0060 T handle
- 1 each, PN 660-0050 Clamp
- 1 each, PN 52100000 Self-Locking Nut
- 1 each, PN 2121 Pin

1) Position the power unit on a firm, floor surface. Insert suitable blocking about both wheel/tire assemblies to prevent accidental movement. The frame assembly surrounding the engine and hydraulic pump should also be in firm contact with the floor surface. FIGURE 5.

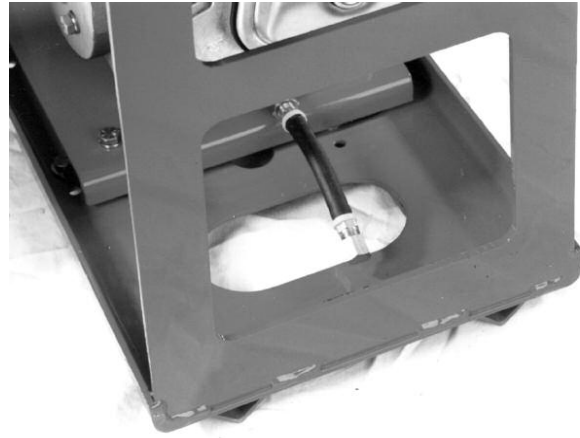


FIGURE 5

2) Insert the male shaft of the operator control unit into the female receptacle of the power unit until the retaining pinholes in the male portion are fully exposed. Refer to FIGURE 9.

3) Screw the PN 660-0060 T handle into the PN 660-0050 clamp until approximately 1/2-inch length of threads are exposed. Screw the PN 52100000 self-locking nut onto the exposed length of the threads. FIGURE 6.

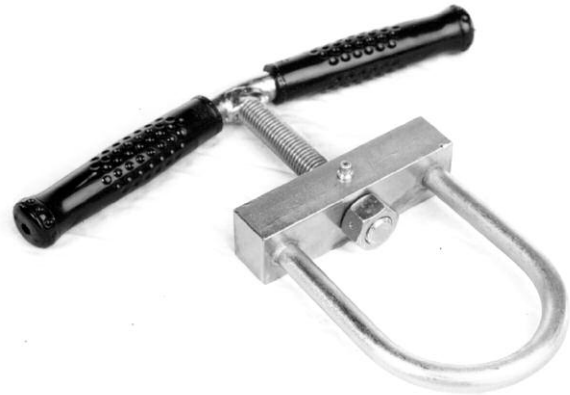


FIGURE 6

4) Slide the lock assembly over the female receptacle of the power unit until the 1/2-inch diameter rod of the clamp fits into the slot cut into the female receptacle. The self-locking nut should be positioned directly over the welded bushing located on top of the female receptacle. FIGURE 7.

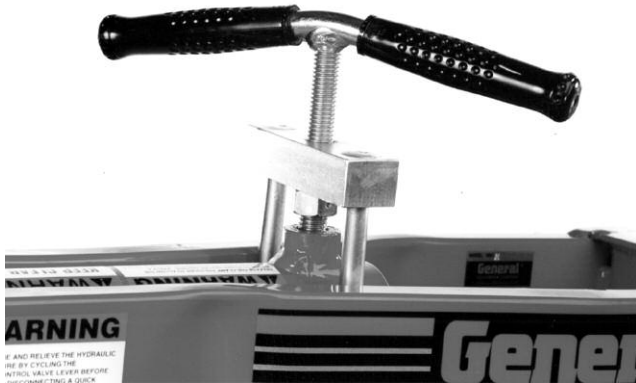


FIGURE 7

5) Using the open end of the 15/16 inch wrench, hold the self locking nut in position as the T handle is rotated clockwise until the clamp **FIRMLY** locks the male shaft of the operator unit in position and it cannot move.

6) Hold the T handle **FIRMLY** in clamped position and use the 15/16 inch wrench to rotate the self locking nut counterclockwise until approximately 1/32 to 1/16 inch (0.08 to 1.6 mm) clearance exists between the bottom of the nut and the top of the welded bushing to prevent road vibrations from causing separation of the clamp assembly from the DIG-R-MOBILE during transport.

FIGURE 8.



FIGURE 8

7) Insert the PN 2121 Pin into the hole and properly secure with latch retaining pin to bottom side. FIGURE 9.

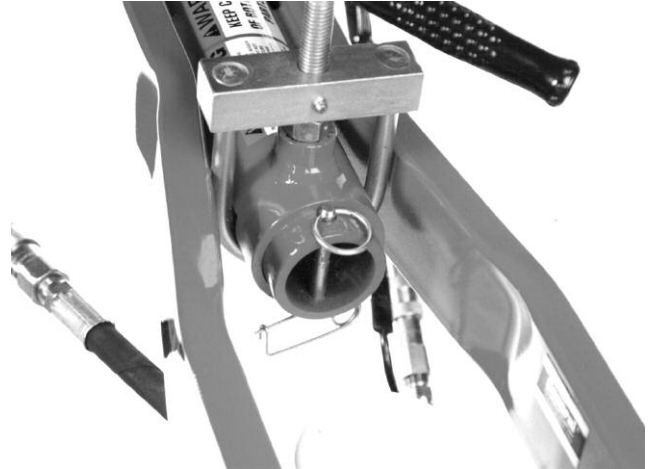


FIGURE 9

8) Connect the male and female hydraulic quick couplers together. Connect the wiring harness of the remote engine ignition ON/OFF switch together. FIGURE 10.



FIGURE 10

9) Connect the male and female hydraulic couplers of the return hydraulic hose together. FIGURE 11.



FIGURE 11

10) Using the grease gun, lubricate the Zerk® type grease fittings located on the clamp and under the female receptacle of the power unit. Use a sufficient amount of grease for each application. This procedure will minimize the formation of rust and corrosion.

11) Check all fasteners for security. Consult a fastener torque chart for the proper torque value if any fastener is found to require retorquing.

12) Check each tire for proper inflation values. For normal road conditions, maintain tire pressure at 25 PSI (1.75 kg/cm²). For other than normal road conditions, contact the Customer Service Department for information relative to your specific requirements or operational problems. There is no charge for this service. Check tire inflation value as a part of a regularly scheduled maintenance program.



DANGER

IMPROPER TIRE INFLATION VALUES FOR ANY SPECIFIC ROAD CONDITION, DRIVING HABITS AND/OR TOWING PROCEDURE CAN REDUCE TOWING STABILITY, RESULTING IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

tests are initiated. Before starting the engine, determine the oil level is within proper levels as specified in the information supplied by the engine manufacturer. When changing the engine oil during normal service intervals, proceed as follows:

Tools Required:

- 1 each, small, adjustable wrench
- 1 each, small, clean funnel with a flexible extension spout
- 1 each, suitable oil drain pan

Changing the engine crankcase oil will require the 660 DIG-R-MOBILE to be positioned on a suitable, flat surface.

- 1) Wipe any dust or dirt from the crankcase dipstick/filler plug area. Remove the dipstick/filler plug.
- 2) Wipe any dust or dirt from the oil drain hose attached to the engine crankcase.
- 3) Using the adjustable wrench, remove the cap from the oil drain hose. Allow the oil to drain into the drain pan.
- 4) Reinstall the cap to the oil drain hose.
- 5) Using the funnel, add oil to the engine crankcase. For proper classifications and/or amount, consult the material supplied by the engine manufacturer for specific information.
- 6) Replace the dipstick/filler plug and tighten. Wipe off any excess spilled oil. Properly dispose of the spilled oil.
- 7) Consult the material supplied by the engine manufacturer for other service related information including oil change interval.



CAUTION

Do not operate the 660 DIG-R-MOBILE unless proper engine oil level is maintained. Improper oil level can result in property damage and/or personal injury. Consult the material supplied by the specific engine manufacturer for information relative to proper maintenance procedures.

Before Starting the Engine

FILLING THE ENGINE CRANKCASE WITH OIL

Applications: All models

Before the 660 DIG-R-MOBILE is shipped from the factory, a series of quality control and performance checks are performed to ensure proper operation in the field. These tests require the engine crankcase to be filled with oil before the

FILLING THE HYDRAULIC RESERVOIR WITH OIL

Applications: All models

Tools Required:
1 each, small, clean funnel

Parts Required:
Varied amount as required, PN 999-14, General Equipment Company Hydraulic Oil

Before the 660 DIG-R-MOBILE is shipped from the factory, a series of quality control and performance checks are performed to ensure proper operation in the field. These tests require the hydraulic reservoir to be filled with oil before the tests are initiated. Before starting the engine, determine the hydraulic reservoir oil level is within the operating limits marked on the dipstick. FIGURE 12. When changing the hydraulic reservoir oil during normal service intervals, refer to the **Service** section for specific information.

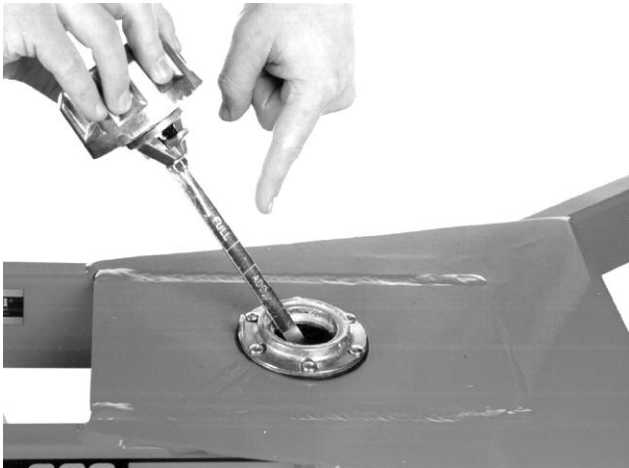


FIGURE 12

CAUTION

Do not operate the 660 DIG-R-MOBILE unless a proper hydraulic oil reservoir level is maintained as per the operating limits marked on the dipstick. Improper oil level can result in property damage and/or personal injury. Consult the **Service** section of this manual for proper maintenance procedures.

To check and/or add oil to the reservoir, proceed as follows:

1) Before removing filler cap, carefully clean the filler cap and top of reservoir to ensure no dirt or debris falls into the hydraulic reservoir.

2) Fill the hydraulic reservoir as per specifications. Do not overfill the reservoir or spill any oil. Replace the filler cap. Wipe off any excess spilled oil. Properly dispose of the spilled oil.

DANGER

DO NOT SMOKE NEAR THE RESERVOIR. DO NOT FILL THE RESERVOIR WITH THE ENGINE RUNNING OR IF IT IS HOT. ALLOW AMPLE TIME FOR THE ENGINE TO COOL BEFORE FILLING THE RESERVOIR. AN IGNITION SOURCE IN PROXIMITY TO THE RESERVOIR CAN BE THE SOURCE OF A FIRE AND/OR EXPLOSION, RESULTING IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

HYDRAULIC RESERVOIR OIL SPECIFICATIONS

Applications: All models

Nominal system capacity is 5 US gallons (19 lit). Service the DIG-R-MOBILE with oil conforming to API 10W40 with service classification SF or CD, containing a minimum of 0.125% zinc antiwear additive.

The maximum allowable fluid temperature for any operation is 200°F (93°C) or that temperature where the hydraulic fluid viscosity falls below 50 SUS. There is no maximum recommended fluid viscosity.

FILLING THE ENGINE FUEL TANK

Applications: All models

Tools Required:
1 each, small, clean funnel

CAUTION

Never mix oil with gasoline for use in a 4-cycle engine. Damage to the engine can result. Four-cycle engines do not utilize oil mixed with gasoline for lubrication purposes.

1) Carefully clean the filler cap and the surrounding area to ensure no dirt or debris falls into the fuel tank.

2) Fill the fuel tank with gasoline as per the material supplied by the specific engine manufacturer.

3) Fill the tank completely. Do not overfill the tank or spill any gasoline. Reinstall the filler cap. Wipe any excess spilled gasoline. Properly dispose of any spilled gasoline.



DANGER

DO NOT SMOKE NEAR THE FUEL TANK. DO NOT FILL THE FUEL TANK WITH THE ENGINE RUNNING OR IF IT IS HOT. ALLOW AMPLE TIME BETWEEN EACH REFUELING FOR THE ENGINE TO COOL. AN IGNITION SOURCE IN PROXIMITY TO THE FUEL TANK CAN BE THE SOURCE OF AN EXPLOSION, RESULTING IN PROPERTY DAMAGE AND/OR PERSONAL INJURY. CONSULT THE MATERIAL SUPPLIED BY THE SPECIFIC ENGINE MANUFACTURER FOR INFORMATION RELATIVE TO PROPER FUELING PROCEDURES.

Digging Operation

OPERATIONAL DISCLAIMER

Applications: All models



DANGER

THE MANUFACTURER OF THIS DIG-R-MOBILE MAKES NO WARRANTY OR GUARANTEE THAT IT IS MERCHANTABLE AND/OR SUITABLE FOR ANY SPECIFIC JOB APPLICATION AND THAT IT WILL HAVE THE POWER REQUIRED TO DIG A SPECIFIC DIAMETER HOLE DOWN TO A SPECIFIC DEPTH IN A SPECIFIC SOIL CLASSIFICATION.

CALIFORNIA PROPOSITION 65 DISCLAIMER

Applications: All models



DANGER

THE ENGINE EXHAUST AND DUSTS/BY-PRODUCTS FROM THE OPERATIONAL PROCESS OF THIS PRODUCT CONTAINS CHEMICALS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER, BIRTH DEFECTS, OR OTHER REPRODUCTIVE HARM.

SPARK ARRESTER DISCLAIMER

Applications: All models

DO NOT OPERATE THE DIG-R-MOBILE ON ANY FOREST COVERED, BRUSH COVERED OR GRASS COVERED LAND UNLESS AN APPROVED SPARK ARRESTER IS INSTALLED ON THE MUFFLER. THE OWNER AND/OR OPERATOR MUST MAINTAIN THE SPARK ARRESTER IN PROPER WORKING ORDER. IN

THE STATE OF CALIFORNIA, THE ABOVE IS REQUIRED BY LAW. OTHER STATES MAY HAVE SIMILAR LAWS. FEDERAL LAWS WILL APPLY ON FEDERAL LANDS.

INFORMATION RELATIVE TO MINIMUM COMPONENT STANDARDS FOR THE OPERATION OF THE DIG-R-MOBILE.

Applications: All models

For operational safety and overall productivity considerations, it is required that specific DIG-R-MOBILE components meet minimum acceptable operational standards BEFORE utilization:

1) Operator handle is of sufficient structural integrity to allow for its proper job function as outlined within this manual. A loose fitting handle or a loose and/or worn directional valve control lever must be repaired or replaced with a factory-approved replacement only.

2) Hydraulic hoses are of sufficient structural integrity to allow for their proper job function as outlined within this manual. Hoses with sharp bends, kinks, cuts, abrasions or other damage that might limit their flow and/or pressure capacity must be replaced with a factory-approved replacement only.

3) Hydraulic fittings are of sufficient structural integrity to allow for their proper job function as outlined within this manual. Fittings with corrosion, damaged threads, cracks or other damage that might limit their flow and/or pressure capacity must be replaced with a factory-approved replacement only.

4) An engine mounted ON/OFF ignition switch (if so equipped) and the remote engine ON/OFF ignition switch that allow them to perform their intended job function as outlined within this manual. Replace any damaged engine mounted ON/OFF ignition switch or remote engine ON/OFF ignition switch with a factory approved replacement part only.

5) Hydraulic reservoir oil of sufficient fluid level, weight, viscosity, type and cleanliness, which allows the DIG-R-MOBILE to perform its intended job, function as outlined within this manual. All oil utilized in the reservoir must meet the requirements as specified in the **Specifications** section of this manual.

6) Each auger is in a structural condition that allows it to perform its intended job function as outlined within this manual. A bent auger axle should not exceed the established limit. An auger with a bent axle exceeding established limits should be properly discarded.

7) Earth auger(s) has/have replaceable wear parts (screw bit and teeth) that allow(s) it/them to perform its/their intended job function as outlined within this manual. An auger with a screw bit and/or tooth/teeth worn past normal service life limits should be repaired BEFORE utilization.

8) A tow bar assembly of proper structural integrity to allow it to perform its intended job function as outlined within this manual. Inspect each component of the tow bar for wear and damage BEFORE attempting to tow the DIG-R-MOBILE. Inspect the tow bar attachment fittings located on the axle assembly for wear and damage BEFORE attempting to tow the DIG-R-MOBILE. Replace any worn and/or damaged component with a factory approved replacement only. Do not replace the attachment pins with non-factory original replacement parts. Do not tow the DIG-R-MOBILE without the original factory supplied retaining pins properly secured to the original factory attachment pins.

9) Tires must be of proper structural integrity and/or capacity to allow them to perform their intended job function as outlined within this manual. Inspect each tire for proper wear, cuts and abrasion. Tires must have minimum legal tread wear limits. Tires must be operated with the proper inflation value as specified in the **Specifications** section of this manual.

10) Determine the proper number (the DIG-R-MOBILE utilizes 5 lug nuts) of lug nuts to secure each wheel to the bearing hubs. Lug nuts must be properly torqued. The wheel assemblies must not be bent and should rotate with acceptable bearing drag or preload values.

11) The axle must be straight and within original factory run out tolerances. A bent axle assembly must be replaced with a factory approved replacement part only.

12) Wheel bearings must be properly lubricated to allow them to perform their intended job function as outlined within this manual. Do not operate the DIG-R-MOBILE with the wheel hub dust caps damaged and/or missing or with improper drag or preload values.



DANGER

OPERATION OF A DIG-R-MOBILE NOT MEETING MINIMUM COMPONENT STANDARDS CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

GENERAL TRANSPORTATION INFORMATION

Applications: All models

When towing the DIG-R-MOBILE behind or on a motor vehicle, the fuel tank ON/OFF valve and fuel tank cap breather vent (if so equipped) must be placed in the

OFF/closed position to eliminate the accidental seepage of fuel and resulting potential fire hazard. In order to minimize the possibility of damage to the DIG-R-MOBILE, always transport it to and from the job site with the auger disconnected. The tow bar configuration of the DIG-R-MOBILE is intentionally designed to prevent the unit from being towed behind a vehicle with the auger attached. Failure to properly transport the DIG-R-MOBILE can result in damage to the hydraulic motor shaft and/or the auger. All equipment must be secured in/on vehicles with suitable strapping or tie downs. Personnel should not be transported in the same compartment as equipment and fuel supplies. Consult applicable OSHA regulations.



DANGER

BEFORE TRANSPORTING THE DIG-R-MOBILE BEHIND OR ON A MOTOR VEHICLE, TURN THE FUEL TANK ON/OFF VALVE AND FUEL TANK CAP BREATHER VENT (IF SO EQUIPPED) TO THE OFF/CLOSED POSITION TO PREVENT THE ACCIDENTAL SEEPAGE OF FUEL THROUGH THE ENGINE CARBURETOR. FAILURE TO COMPLY WITH THIS PROCEDURE CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.



DANGER

THE TOWBAR CONFIGURATION OF THE DIG-R-MOBILE IS INTENTIONALLY DESIGNED TO PREVENT THE UNIT FROM BEING TOWED WITH THE AUGER ATTACHED. DO NOT MODIFY THE FACTORY DESIGNED TOWBAR TO ALLOW THE UNIT TO BE TOWED BEHIND A VEHICLE WITH THE AUGER ATTACHED. SUCH AN OCCURRENCE CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

1) Inspect the hitch coupler components of the tow bar for proper structural integrity. Replace any questionable component with a factory approved replacement part only. The hitch coupler is adjustable to accept both 1-7/8 (48 mm) and 2-inch (51 mm) ball hitches.

2) Inspect the tow bar attachment pins and quick latch type retaining pins for proper structural integrity. Do not substitute factory original components with non-original parts. Replace any questionable component with a factory approved replacement part only.

3) Inspect the tow bar frame for proper structural integrity. The tow bar frame must be of a symmetrical configuration with no frame twists or no manufactured bends allowed. All welds must be free of stress related cracks. Replace any questionable tow bar configuration with a factory-approved replacement only.

4) Inspect tow bar frame attachment fittings (welded to axle) for proper structural integrity. Maximum serviceable hole diameter of an attachment fitting is 0.562 inch (14.3 mm). Replace the axle assembly with a factory approved replacement part if a hole diameter exceeds this value.

5) Inspect the tow bar frame attachment fittings (welded to the end of the tow bar) for proper structural integrity. The maximum serviceable hole diameter of an attachment fitting is 0.562 inch (14.3 mm). Replace the tow bar assembly with a factory approved replacement part if a hole diameter exceeds this value.

ATTACHING THE TOW BAR TO THE DIG-R-MOBILE

Applications: All models

Towing the DIG-R-MOBILE requires the tow vehicle to be equipped with a suitable ball hitch towing system meeting applicable Federal and/or State standards. Consult current Federal and/or State towing standards for specific information BEFORE attempting to tow the DIG-R-MOBILE. Contact the Customer Service Department for assistance. There is no charge for this service. A suitable ball hitch towing system includes, but is not limited to the following:

a) A hitch frame system of proper structural integrity, properly mounted to the tow vehicle and meeting all applicable Federal and/or State towing standards. Determine the hitch system is properly mounted to the tow vehicle

b) Provisions made (where required) for externally lighting the DIG-R-MOBILE while towing to meet applicable Federal and/or State standards. The DIG-R-MOBILE is not equipped with externally mounted towing lights. If externally mounted lights are required for towing operations, contact the Customer Service Department for assistance. There is no charge for this service.

c) A 1-7/8 inch (48 mm) or 2-inch (51 mm) diameter ball of proper structural integrity. Determine the ball is properly mounted to the hitch system according to applicable Federal and/or State standards.

To attach the tow bar to the DIG-R-MOBILE, proceed as follows:

1) Position the DIG-R-MOBILE on a suitable, level surface. Utilizing a non-level surface to attach the tow bar to the DIG-R-MOBILE will increase the difficulty, especially when only one operator is present. The power unit should be in contact with the surface.

DANGER

IF A NON-LEVEL SURFACE IS UTILIZED TO ATTACH THE TOWBAR TO THE DIG-R-MOBILE, PROPERLY BLOCK THE UNIT TO PREVENT ANY MOVEMENT DURING THE ATTACHMENT PROCESS. UNEXPECTED MACHINE MOVEMENT DURING THE ATTACHMENT PROCESS CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

2) Position the tow bar attachment fittings within the axle attachment fittings. In this configuration, the hitch coupler will be in contact with the surface. Align and insert the retaining pin until the small hole clears the axle attachment fitting. The pin should face toward the tires. Repeat the process for the remaining side. FIGURE 13.

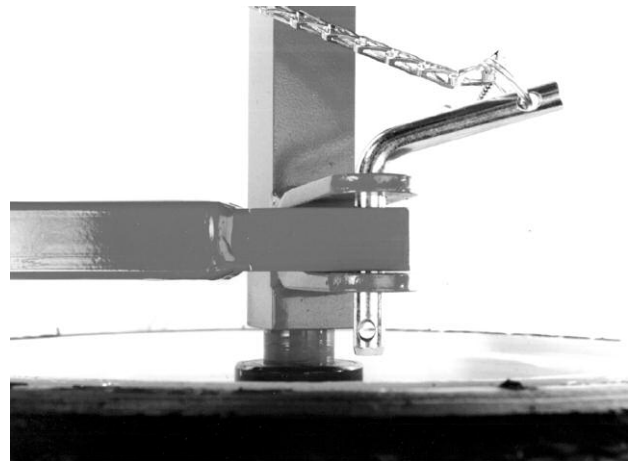


FIGURE 13

3) Insert the latch retaining pin into the hole of the attachment pin. FIGURE 14.



FIGURE 14

IMPORTANT: When installed, the circular ring is designed to be positioned around the attachment pin. This configuration locks the retaining pin in proper position. FIGURE 15.

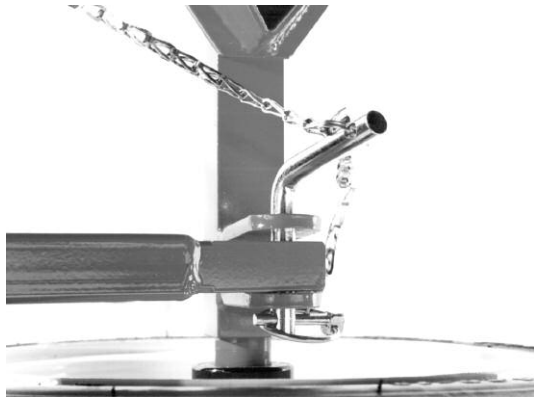


FIGURE 15

4) Raise the hitch coupler into the receiver assembly located under the operator handle until the tow bar contacts the rubber shock absorber. FIGURE 16.



FIGURE 16

NOTE: The shock absorber is intended to help provide a damping force while towing the DIG-R-MOBILE. If the tow bar will not properly fit within receiver assembly, the probable cause is misalignment of the operator control unit or axle assembly in relationship to the tow bar. FIGURE 17.

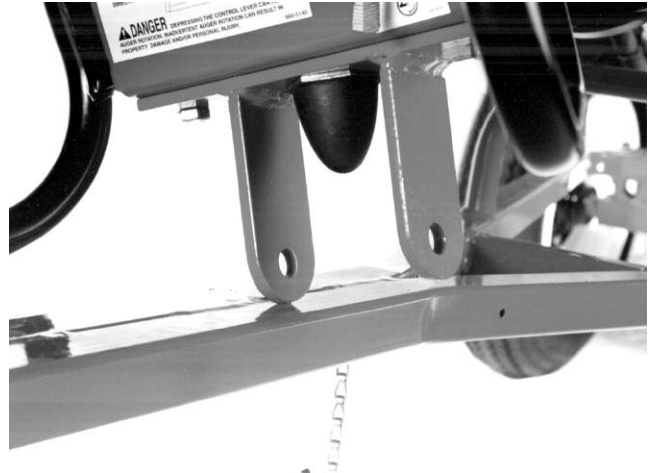


FIGURE 17

NOTE: Loosening the tilt locking mechanism to allow the tow bar to fit within the receiver assembly or realigning the axle perpendicular with the machine axis can correct this occurrence. FIGURE 18.



FIGURE 18

5) Align and insert the attachment pin until the small hole clears the receiver assembly. Insert the latch pin into the hole of the attachment pin. When installed, the circular ring is designed to be positioned around the attachment pin. This configuration locks the retaining pin in proper position. FIGURE 19.



FIGURE 19

6) To remove tow bar from DIG-R-MOBILE, reverse STEPS 1 THRU 5.



CAUTION

The addition of the tow bar mounted to the DIG-R-MOBILE reduces the associated weight and balance-operating envelope. Inadvertent contact with the tow bar and/or operator control can result in unexpected movement. This occurrence can result in property damage and/or personal injury.

ATTACHING THE DIG-R-MOBILE AND TOW BAR TO THE TOW VEHICLE

Applications: All models

Attaching the DIG-R-MOBILE and tow bar to the tow vehicle will require a suitable, level surface. Using a non-level surface to attach the DIG-R-MOBILE and tow bar to the tow vehicle will increase the difficulty, especially when only one operator is present. To attach the DIG-R-MOBILE and tow bar to the tow vehicle, proceed as follows:

1) Loosen the hitch coupler retaining screw of the tow bar to allow the external clamping mechanism to properly fit around the hitch ball. FIGURE 20.

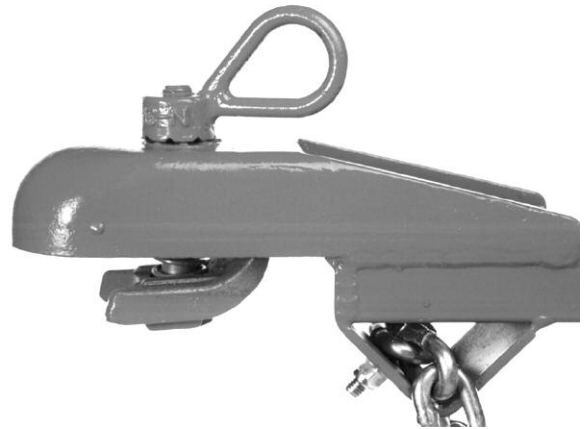


FIGURE 20



DANGER

Do not strike the retaining screw clamp with a hammer or similar object. A direct impact blow to the clamp can result in property damage and/or personal injury.

2) Lower the DIG-R-MOBILE tow bar and position the hitch coupler to allow its external clamping mechanism to properly clamp about the ball. FIGURE 21.

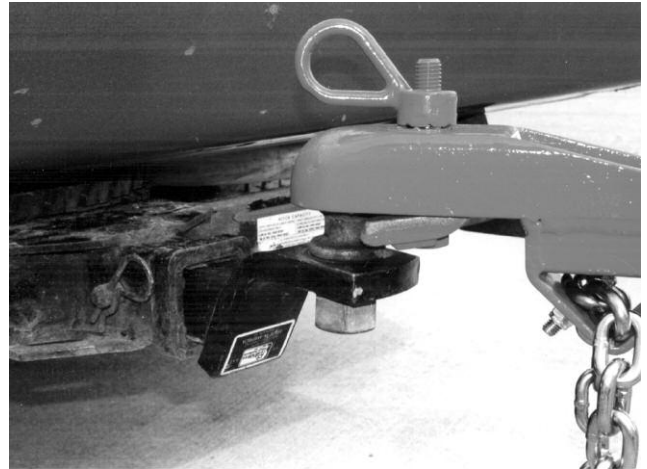


FIGURE 21

3) Tighten the hitch coupler retaining screw until the clamping mechanism fits SNUG about the surface of the ball. Normal operation will only require the use of hands during the tightening process.

4) If the length of the safety chains is sufficient, it is recommended to pass both safety hooks through the opening of the retaining screw handle and then attach to the tow vehicle hitch mechanism according to applicable Federal and State towing standards. FIGURE 22. If the chain cannot be routed in this configuration, bypass the hitch coupler handle and attach directly to the tow vehicle. In the event the safety chain length is not sufficient to attach to the tow vehicle hitch mechanism, contact the Customer Service Department for assistance. There is no charge for this service.



FIGURE 22

5) If utilizing an externally mounted lighting system, make all necessary electrical connections. Test each light for proper operation BEFORE attempting to tow the DIG-R-MOBILE.

6) Remove auger from bottom hydraulic motor. Fully retract SNAP-LOK lever and move to the fully locked position (toward the operator position). This is the proper position for the power head assembly during transit. FIGURE 23.



FIGURE 23

IMPORTANT: The DIG-R-MOBILE is not designed to be towed with an auger attached to the hydraulic motor driveshaft.

DANGER

DO NOT MODIFY THE ORIGINAL FACTORY DESIGNED TOWBAR CONFIGURATION TO ALLOW AN AUGER TO BE ATTACHED TO THE HYDRAULIC MOTOR DRIVESHAFT WHILE TOWING BEHIND A VEHICLE. SUCH A DESIGN CONFIGURATION CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

7) Tighten the tilt clamping mechanism until the operator control unit is firmly locked in position. The self-locking nut should not be in direct contact with the top of the housing that retains the threaded shaft. FIGURE 24.



FIGURE 24

CAUTION

When towing the DIG-R-MOBILE, the operator control unit must be properly secured by the tilt clamping mechanism. Failure to properly secure the operator control unit with proper clamping pressure can affect towing stability. Reduced towing stability can result in property damage and/or personal injury.

8) Determine the latch retaining pin is properly secured to the operator control unit. FIGURE 25

DANGER

DO NOT UTILIZE AND/OR TOW THE DIG-R-MOBILE WITHOUT THE PN 2121 SAFETY RETAINING PIN PROPERLY LATCHED AND RETAINING THE OPERATOR CONTROL UNIT TO THE MAIN FRAME ASSEMBLY. THE USE OF A NON FACTORY PIN OR NOT UTILIZING THE FACTORY SUPPLIED RETAINING PIN CAN SIGNIFICANTLY INCREASE THE POTENTIAL FOR THE SEPARATION OF THE OPERATOR CONTROL UNIT FROM THE MAIN FRAME ASSEMBLY DURING JOB SITE USE AND/OR WHILE TOWING. SUCH AN OCCURRENCE CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

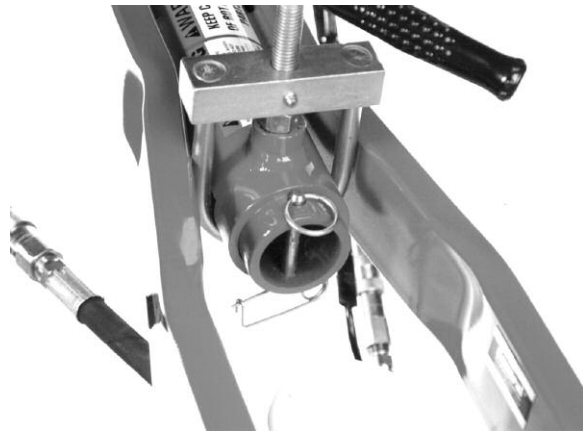


FIGURE 25

9) Removing the DIG-R-MOBILE and tow bar from the towing vehicle requires the attachment process to be reversed, STEPS 1 THRU 8.

10) Determine the fuel tank ON/OFF valve is in the OFF position BEFORE attempting to tow the DIG-R-MOBILE. The DIG-R-MOBILE engine is equipped with a float type carburetor. Bouncing and vibration created from the towing process can allow the internal carburetor float valve to move. If the ON/OFF valve is not in the OFF position, this occurrence can allow gasoline to move past the valve seat and into the crankcase and/or combustion chamber. The result can be a hydro-locked combustion chamber and/or a gasoline diluted engine crankcase. In both instances, the engine will require repair from a qualified service technician BEFORE it is operated.

CAUTION

BEFORE TOWING AND/OR TRANSPORTING THE DIG-R-MOBILE, DETERMINE THE FUEL TANK ON/OFF VALVE IS IN THE OFF POSITION. TOWING AND/OR TRANSPORTING THE DIG-R-MOBILE WITHOUT THE FUEL TANK ON/OFF VALVE IN THE OFF POSITION CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

11) Inspect the DIG-R-MOBILE and tow bar for loose parts and/or components. Determine the DIG-R-MOBILE and tow bar are in proper condition BEFORE towing. This includes, but is not limited to these additional components:

- a) Fuel tank cap
- b) Air cleaner cover assembly
- c) Hydraulic oil reservoir cap/dipstick assembly
- d) Engine crankcase dip stick(s) is/are properly secured
- e) Wheel bearing dust caps
- f) Tow vehicle hitch mechanism

DANGER

IMPROPER ATTACHMENT AND/OR TOWING PROCEDURES CAN RESULT IN THE FOLLOWING OCCURRENCES:

- a) The DIG-R-MOBILE becomes separated from the tow bar.
- b) The DIG-R-MOBILE and tow bar become separated from the vehicle.
- c) The DIG-R-MOBILE, tow bar and hitch system becomes separated from the tow vehicle.

IN EACH OCCURRENCE, PROPERTY DAMAGE AND/OR PERSONAL INJURY CAN RESULT.

GENERAL TOWING INFORMATION

Applications: All models

1) The DIG-R-MOBILE engine is equipped with a float type carburetor. BEFORE attempting to tow and/or transport the DIG-R-MOBILE, determine the fuel tank ON/OFF valve is in the OFF position to minimize the potential for fuel entering the engine combustion chamber and/or crankcase. FIGURE 26.

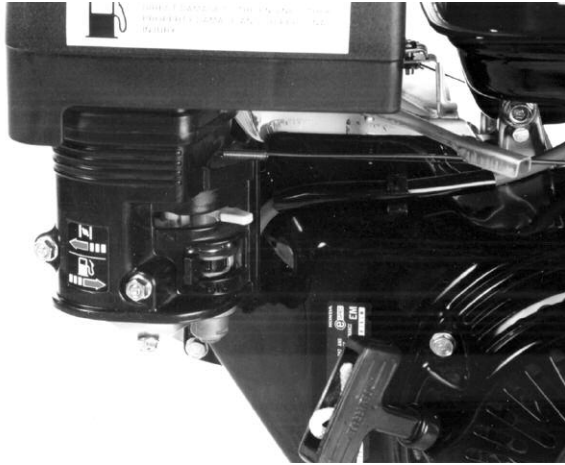


FIGURE 26

CAUTION

BEFORE TOWING AND/OR TRANSPORTING THE DIG-R-MOBILE, DETERMINE THE FUEL TANK ON/OFF VALVE IS IN THE OFF POSITION. TOWING AND/OR TRANSPORTING THE DIG-R-MOBILE WITHOUT THE FUEL TANK ON/OFF VALVE IN THE OFF POSITION CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

2) Tow the DIG-R-MOBILE approximately one mile at a proper speed for the prevailing driving conditions. Stop the tow vehicle in a suitable location to determine the hitch coupler is properly connected to the ball. The hitch coupler clamping mechanism should be in proper contact with the surface of the ball. The safety chains should be properly connected to the tow vehicle hitch mechanism. The hitch ball should be properly connected to the tow vehicle hitch mechanism. Make any necessary and proper adjustments BEFORE any further towing.

DANGER

IF THE HITCH COUPLER IS NOT PROPERLY ATTACHED TO THE BALL, DO NOT CONTINUE TO TOW THE DIG-R-MOBILE UNLESS PROPER AND NECESSARY ADJUSTMENTS ARE MADE. IMPROPER TOWING PROCEDURES CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

3) The DIG-R-MOBILE is intended to be towed at prevailing speeds deemed appropriate for the specific driving conditions, driver capabilities, geographical terrain and driving environment present. The manufacturer makes no specific or implied guarantee that the DIG-R-MOBILE can exhibit the necessary stability requirements while being towed at any specific speed, driver capabilities, geographical

terrain and for any given driving environment. Like any similar towed device, proper towing procedures for the DIG-R-MOBILE for any given driving condition, driver capabilities, geographical terrain and driving environment require actual experience/skill/common sense.

4) As with any similar, towed device, the DIG-R-MOBILE has an inherently higher center of gravity. Making sharp, accelerating and/or decelerating turns with the tow vehicle at any given speed can allow the DIG-R-MOBILE to react by tipping over on its side

DANGER

DO NOT OPERATE THE TOW VEHICLE IN ANY MANNER WHICH ALLOWS AND/OR CAUSES THE DIG-R-MOBILE TO TIP OVER ON ITS SIDE. SUCH AN OCCURRENCE CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

5) When towing the DIG-R-MOBILE, it is suggested a proper replacement wheel and tire assembly be readily available in the event of a flat or damaged tire. There are no provisions for storing the replacement tire on the DIG-R-MOBILE or tow bar.

DETERMINATION OF POTENTIAL SUBSURFACE HAZARDS IN THE PROPOSED DIGGING LOCATION(S)

Applications: All models

DANGER

BEFORE ATTEMPTING TO DIG WITH THE DIG-R-MOBILE, DETERMINE THE POTENTIAL SUBSURFACE HAZARDS THAT MAY EXIST IN THE PROPOSED DIGGING LOCATION(S). POTENTIAL SUBSURFACE HAZARDS MAY INCLUDE, BUT NOT BE LIMITED TO, THE FOLLOWING:

- 1) ROCKS AND ROOTS OF ANY SIZE.
- 2) DIFFERENCES AND/OR VARIANCES IN SPECIFIC SOIL CLASSIFICATIONS.
- 3) BURIED GARBAGE/OTHER DEBRIS.
- 4) BURIED PRESSURIZED PIPELINES (E.G. NATURAL GAS, PROPANE, ETC.)
- 5) BURIED ELECTRICAL CABLES.



DANGER

BEFORE ATTEMPTING TO DIG WITH THE DIG-R-MOBILE IN THE PROPOSED LOCATION(S), CONTACT ALL APPROPRIATE AGENCIES TO DETERMINE THE EXACT LOCATION(S) OF ALL BURIED PIPELINES, POWER LINES AND MATERIAL DEBRIS. MANY UTILITIES AND OTHER AGENCIES WILL PERFORM THIS TASK FOR A MINIMAL CHARGE OR AT NO COST. HAVE ALL SUBSURFACE HAZARDS MARKED FOR EASY RECOGNITION. DIRECT CONTACT WITH THESE AND OTHER SUBSURFACE HAZARDS CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

SET UP FOR DIGGING

Applications: All models

Flat topography is the normal job site terrain intended for operating the DIG-R-MOBILE for any specific job application. Operation of the DIG-R-MOBILE on a sloping job site terrain may require the additional use of proper blocking to prevent unexpected machine movement.



CAUTION

The DIG-R-MOBILE is not equipped with a parking brake system. Use of the DIG-R-MOBILE on a sloping terrain will require additional experience, skill and common sense along with proper blocking, if and where required, to prevent unexpected machine movement.

1) Remove the DIG-R-MOBILE and tow bar from the tow vehicle, making note of the existing job site topography. Use proper blocking, if and where required, to prevent unexpected tire movement. Both tires of power unit base and engine cradle should be in contact with the ground.

2) Remove the tow bar from the DIG-R-MOBILE and store tow bar in a suitable location.

3) Visually inspect the DIG-R-MOBILE and related components for loose, worn and/or broken parts. Replace any questionable component with a factory-approved replacement.

4) Visually inspect the dipstick of the reservoir tank for proper fluid level. Maintain the level as marked on the dipstick. FIGURE 27.

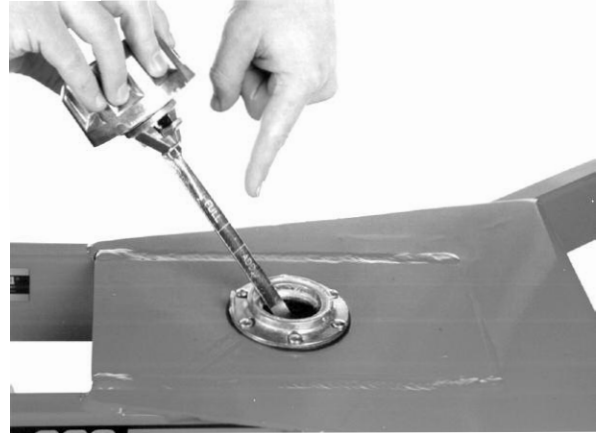


FIGURE 27

5) Release the SNAP-LOK control lever to a near vertical position. This is accomplished by the following process:

a) Firmly grasp the SNAP-LOK control lever handle, keeping the round handle within the palm of the hand. Using your fingers, pull up on the latch mechanism until the latch bars fully clear the rear retainers. FIGURE 28.



FIGURE 28

b) Push the SNAP-LOK control lever away from the operator. At the same time, release the latch mechanism to allow the ends of the latch bars to drag on the curved edge of frame. FIGURE 29.



FIGURE 29

- c) Position the SNAP-LOK control lever in a near vertical position.
- d) Regardless if the engine is running or stopped, keep all hands, arms and other body parts clear of the directional control valve when operating the SNAP-LOK control lever.
- 6) Determine both sets of hydraulic couplers are properly connected to ensure proper oil flow to the hydraulic motor. FIGURE 30 depicts a set of quick couplers properly connected. FIGURES 31 and 32 depict a set of quick couplers improperly connected.

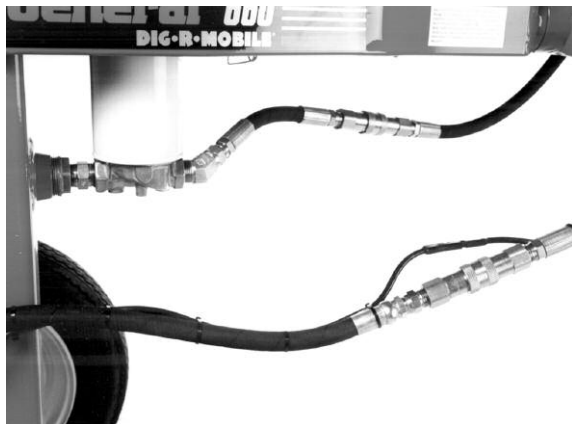


FIGURE 30



FIGURE 31



FIGURE 32

CAUTION

Improper hydraulic quick coupler connection can result in an inoperable hydraulic system, property damage and/or personal injury.

- 7) Determine the remote engine ignition ON/OFF switch wiring harness is properly connected. The wiring harness should only be disconnected when the 660 DIG-R-MOBILE is disassembled for maintenance or repair. FIGURE 33.

CAUTION

The remote engine ignition ON/OFF switch is intended as a safety device. Operation of the switch requires the wiring harness to be properly connected. Do not operate the DIG-R-MOBILE without the wiring harness properly connected and the ignition switch properly functioning. Test the remote ignition switch on a frequent basis to determine it can properly accomplish its stated purpose. An improper wiring harness connection and/or an improperly functioning remote engine ignition ON/OFF switch can result in property damage and/or personal injury.



FIGURE 33

8) Cycle the directional control lever in the forward and reverse directions to relieve the internal pressure from the hydraulic hose assemblies BEFORE attempting to connect the auger to the hydraulic motor driveshaft.

DANGER

FAILURE TO PROPERLY CYCLE THE DIRECTIONAL CONTROL VALVE TO RELIEVE THE INTERNAL PRESSURE FROM THE HYDRAULIC HOSE ASSEMBLIES PRIOR TO ATTACHING THE AUGER CAN RESULT IN UNEXPECTED AUGER ROTATION IF THE DIRECTIONAL CONTROL VALVE HANDLE IS UNEXPECTEDLY ACTUATED. THIS OCCURRENCE CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

9) Turn engine OFF. Do not connect auger to DIG-R-MOBILE with engine operating. Connect the auger to the DIG-R-MOBILE with the factory supplied auger pin. All models equipped with the hexagon auger driveshaft connection utilize the 3/8-inch (9.5 mm) diameter, PN 2121 auger pin. All models equipped with the square auger

driveshaft connection utilize the 5/16-inch (9 mm) diameter, PN 2021 auger pin. All models equipped with the Stihl® type auger driveshaft connection utilize the 3/8 inch (9.5 mm) diameter, PN 2121 auger pin. FIGURE 34.



FIGURE 34

CAUTION

When installing the auger and auger pin, always place the engine cradle in contact with the ground. Do not attempt to balance the DIG-R-MOBILE on its tires only when installing the auger. Such an occurrence can result in property damage and/or personnel injury.

CAUTION

The factory supplied auger pin is designed to withstand the high stresses encountered while digging. Use of any other connecting device, including cap screws, bolts, pins, etc., can result in damage to the DIG-R-MOBILE driveshaft and/or auger drive hub. Improper connecting devices can result in property damage and/or personal injury.

DANGER

DO NOT CONNECT THE AUGER TO THE DIG-R-MOBILE WITH THE ENGINE OPERATING. A SUDDEN AND/OR ACCIDENTAL DEPLOYMENT OF THE DIRECTIONAL CONTROL VALVE LEVER WILL ALLOW THE AUGER TO ROTATE. UNEXPECTED AND/OR ACCIDENTAL AUGER ROTATION CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

DANGER

THE DIG-R-MOBILE IS DESIGNED FOR OPERATION BY ONE OPERATOR. USE BY TWO OR MORE OPERATORS CAN LEAD TO CONFUSION AND LOSS OF CONTROL, RESULTING IN PROPERTY DAMAGE AND/OR PERSONAL INJURY. THE CONTROLS ARE DESIGNED FOR THE OPERATOR TO START THE ENGINE AND THEN MOVE TO THE PROPER POSITION TO DIG THE HOLE WHILE OPERATING THE DIRECTIONAL CONTROL VALVE LEVER.

10) If the DIG-R-MOBILE is not to be used immediately on the job site or moved to the desired digging location, place the auger in the storage position.
FIGURE 35.



FIGURE 35

Auger storage on the DIG-R-MOBILE is accomplished by the following process:

a) Firmly grasp the SNAP-LOK control lever handle, keeping the round handle within the palm of the hand. Position your fingers about the latch mechanism. FIGURE 36.



FIGURE 36

b) Pull the SNAP-LOK control lever toward the operator. At the same time, release the latch mechanism to allow the ends of the latch bars to drag on the frame until they come in contact with the bar retaining notches. Release the SNAP-LOK control lever to allow the springs to firmly seat the latch bars into the retaining notches. FIGURE 37.



FIGURE 37

c) Regardless if the engine is running or stopped, keep all hands, arms, clothing and foreign objects clear of the directional control valve when operating the SNAP-LOK control lever.

CAUTION

Operating the SNAP-LOK control lever requires sufficient physical size and/or strength to properly actuate the control mechanism and supply the forces required to store and/or release the auger for the digging operation. Insufficient physical size and/or strength to properly operate the SNAP-LOK control system can result in property damage and/or personal injury.

STARTING THE ENGINE WITH THE AUGER ATTACHED

Applications: All models

Flat topography is the normal job site terrain intended for operating the DIG-R-MOBILE for any specific job application. Maneuvering the DIG-R-MOBILE on a sloping job site terrain will require the additional use of proper blocking, if and where required, to prevent unexpected tire movement.

CAUTION

The DIG-R-MOBILE is not equipped with a parking brake system. Use of the DIG-R-MOBILE on a sloping terrain will require additional experience, skill and common sense with proper blocking, if and where required, to prevent unexpected tire movement.

1) Grass and other overgrowth conditions will hamper the digging characteristics of any earth auger by becoming "clogged" around the auger teeth and screw bit. Removal of such obstructions from the hole location BEFORE attempting to dig will increase digging efficiency and overall productivity.

2) Place the DIG-R-MOBILE in a suitable location on or near the desired hole location. Both tires of the power unit and engine cradle should be placed in contact with the ground. When digging on sloping terrain, special procedures must be followed. ALWAYS position the DIG-R-MOBILE parallel with the terrain slope. The operator must NEVER position himself above or below the DIG-R-MOBILE in this operating configuration. ALWAYS position the DIG-R-MOBILE across the terrain slope. To dig a vertical hole in this configuration, it is necessary to adjust the side tilt lever mechanism until the auger is plumb. Tighten the tilt lever mechanism securely. The maximum grade angle for operation of the DIG-R-MOBILE is 15 degrees. FIGURE 38 depicts a proper digging configuration for the DIG-R-MOBILE on sloping terrain. FIGURES 39 and 40 depict improper digging configurations for the DIG-R-MOBILE on a sloping terrain.



FIGURE 38



FIGURE 39



FIGURE 40

3) Manually cycle the directional valve control lever to determine the valve is in the spring centered, neutral position. The valve must properly return to the neutral position without any externally applied force.

DANGER

DO NOT OPERATE THE DIG-R-MOBILE IF THE SELF-CENTERING MECHANISM OF THE DIRECTIONAL CONTROL VALVE DOES NOT PROPERLY FUNCTION. WHEN THE LEVER IS RELEASED, THE DIRECTIONAL CONTROL VALVE MUST PROPERLY RETURN TO THE NEUTRAL POSITION WITHOUT ANY APPLIED EXTERNAL FORCE. IMPROPER DIRECTIONAL CONTROL VALVE OPERATION CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

4) Turn the remote engine ignition ON/OFF switch located under the directional valve control lever to the ON position. The engine can only be started if the remote engine ignition ON/OFF switch is in the ON position. FIGURE 41.

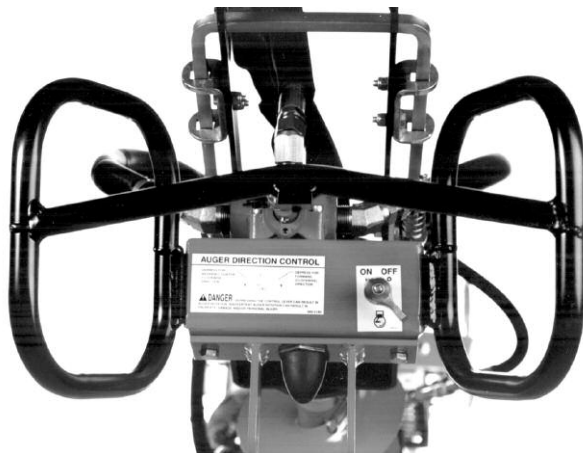


FIGURE 41

5) Open the fuel tank breather vent (if so equipped) to its maximum set position. Failure to properly open the breather vent will prevent the engine from receiving a continuous supply of fuel.

6) Turn the fuel tank ON/OFF valve located near the fuel tank to the ON position. FIGURE 42.

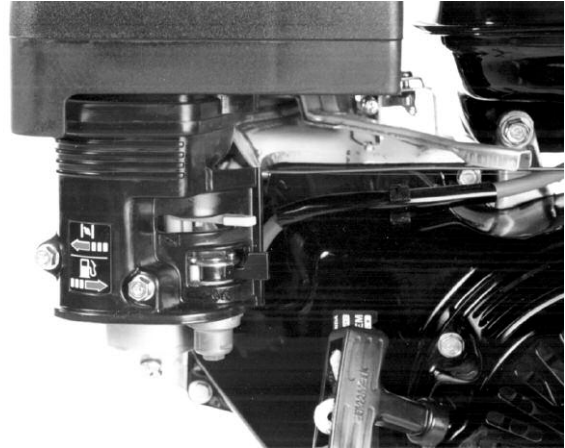


FIGURE 42

7) Turn the engine ignition ON/OFF switch to the ON position as outlined in the information supplied by the specific engine manufacturer. FIGURE 43.

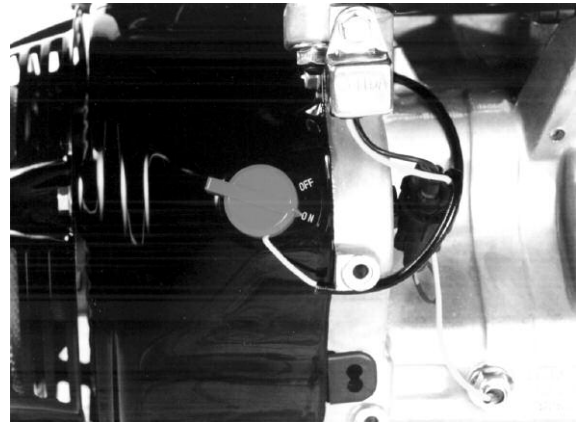


FIGURE 43

8) When starting a cold engine, close the engine choke as outlined in the information supplied by the engine manufacturer. A warm engine may not require choking. FIGURE 44.

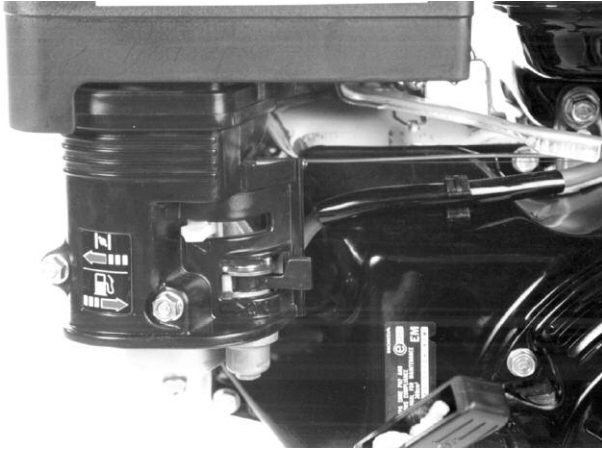


FIGURE 44

9) Move the engine throttle control to the starting position as outlined in the information supplied by the engine manufacturer. Pull the recoil starter handle until engine compression is felt. Then, give a fast, short, steady pull. Allow the starter rope to retract slowly. If the engine does not start after three pulls, stop and consult the information supplied by the engine manufacturer for specific information. Keep body parts clear of engine and frame assembly. Proper operator position for starting the engine is depicted in FIGURE 45.



FIGURE 45

CAUTION

Keep all body parts and foreign objects clear of the structural components of the DIG-R-MOBILE during the engine starting procedure. Contact with any structural component during the starting procedure can result in property damage and/or personal injury.

10) Normally an engine that has not run for some time will require three to five pulls before it will start. On the other hand, a recently operated engine will usually start on the first or second pull. In cold weather, initial starting will require additional pulls because an extremely rich fuel/air mixture is required.

11) Allow the engine to properly "warm up" before operating at high speed. Check for excessive hydraulic pump noise and/or vibration.

12) Increase the engine RPM to the maximum, governed speed as set by the factory.

13) Stopping the DIG-R-MOBILE is accomplished by either one of two methods:

a) Turn the engine ignition ON/OFF switch to the OFF position.

b) Turn the remote engine ignition ON/OFF switch located under the directional control valve lever to the OFF position.

13) When the engine is not running, turn the fuel tank ON/OFF valve to the OFF position to minimize the potential for fuel flooding the carburetor and/or entering the engine crankcase and/or impacting upon the environment.

CAUTION

If the DIG-R-MOBILE and/or an individual component or accessory does not appear to be functioning properly, STOP and do not further operate it until the necessary corrective action has been completed. If you have any questions regarding the proper operation of the DIG-R-MOBILE, contact the Customer Service Department BEFORE further utilization. There is no charge for this service.

OPERATING THE DIG-R-MOBILE

Applications: All models

1) Grab operator handle with both hands, cradling the handle between fingers and thumbs. Do not attempt to begin digging with the DIG-R-MOBILE until the operator is ready to begin the process and is in full control of the machine.

2) Release the SNAP-LOK lever to position the tip of the auger over (and in contact with) the desired position for the hole. Manually push the DIG-R-MOBILE forward until the auger axle makes approximately a 15 to 20° degree angle relative to the ground. FIGURE 46.



FIGURE 46

This configuration is depicted on decal, part number 660-5130, located on the side of the oil reservoir. The operator should assume a position with the following characteristics:

- a) Both hands are properly gripping the operator handle/directional valve control lever.
- b) The back is positioned in a vertically orientation as much as possible and/or practical for the specific application.
- c) The left foot is placed in front of the right foot and both feet are spread apart in a comfortable stance as practical for the specific application to aid in body stability. Do not stand in a flat-footed position. Specific characteristics will vary from one operator to another.
- 4) Pull the right side of the directional valve control lever to its maximum set position. The movement will initiate auger rotation. FIGURE 47. The auger should rotate in a clockwise (right hand rotation) direction into the ground as viewed by the operator. If the auger rotates in a counter-clockwise (left hand rotation) direction when the right side of the control lever is pulled, STOP and DO NOT further operate the DIG-R-MOBILE. This occurrence indicates the hydraulic hoses are not properly connected to the hydraulic motor and required service MUST be performed BEFORE further use.



FIGURE 47

CAUTION

Do not operate a DIG-R-MOBILE with the directional valve control lever hoses improperly connected to the hydraulic motor. Improper directional valve control lever function can result in property damage and/or personal injury.

DANGER

KEEP ALL BODY PARTS, LOOSE CLOTHING AND FOREIGN OBJECTS CLEAR OF THE ROTATING AUGER. CONTACT WITH THE ROTATING AUGER CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

5) Normal operating procedure for the DIG-R-MOBILE is to dig with the engine operating at full, governed speed to allow the hydraulic system to develop the rated auger speed and drilling torque. This procedure will transmit more usable power to the auger, resulting in greater productivity and less component wear.

6) The hydraulic system is equipped with a pressure relief valve. The pressure relief valve is a safety device that will deploy whenever the auger becomes overloaded or if the auger comes in contact with a buried obstruction. When the valve is deployed, a high-pitched, squealing noise will occur. This occurrence can produce excessive heat, which can substantially raise the oil reservoir temperature and affect the ability of the hydraulic motor to operate efficiently. WHEN THE RELIEF VALVE IS DEPLOYED, IMMEDIATELY RELEASE THE DIRECTIONAL VALVE CONTROL LEVER TO THE NEUTRAL POSITION.

NOTE: The response time for the relief valve to react to an overload condition is directly proportional to the amount of oil flow and system pressure being produced. The greater the oil flow and pressure of the hydraulic system at the time of overload, the greater amount of time the relief valve requires to react and deploy. This phenomenon is inherent with all open centered hydraulic systems. It is inherent with all powered equipment incorporating similar hydraulic systems.

CAUTION

When digging in areas filled with known, buried obstructions such as tree roots, rocks and other debris, moving the directional valve control lever to less than its maximum set position will help ensure more rapid deployment of the hydraulic system relief valve when an obstruction is encountered.

7) Once the auger enters the soil, carefully monitor the initial digging process. At approximately 6 inch drilling depth, the rotation of the auger will begin to push the DIG-R-MOBILE towards the operator. The action also begins to pull the auger in a more vertical orientation to produce a hole that is reasonably perpendicular to the surface. To aid in the process of producing a perpendicular hole, the operator may be required to apply a supplemental pushing force against the DIG-R-MOBILE. The amount of force required will be dependent upon a number of factors including, but not limited to: auger diameter, required digging depth, job site terrain and prevailing soil conditions. FIGURE 48.



FIGURE 48

8) To remove auger from hole, pull the left side of the directional valve control lever. This procedure will produce a counter-clockwise auger rotation.

UNDERSTANDING KICKBACK

Applications: All models

The operation of the DIG-R-MOBILE involves engine power being transmitted through the hydraulic system to the auger. The energy is then used to dig holes. But to every force (action), there is always a reaction force in the opposite direction. The design of the DIG-R-MOBILE is intended to minimize the occurrence and/or possibility of kickback during the digging process. However, given the wide number of potential soil compositions, job applications, experience levels and job site terrains, there is no specific guarantee that kickback will not occur. Thus, if the auger contacts a buried obstruction, there is a possibility the operator can feel/experience the left side of the operator handle being "thrust" towards himself. The "thrusting" force experienced by the operator is called kickback. The speed (and magnitude of the resulting impact force) at which the auger strikes the buried object is directly proportional to the amount/speed of the kickback force experienced by the operator. The torque and kickback generated by the digging process is inherent with the hole digging process and cannot be totally eliminated by any operation and/or design characteristic.

MINIMIZING THE OCCURRENCE OF KICKBACK FROM AN OPERATIONAL STANDPOINT

Applications: All models

Assume an operating position that allows the operator to exercise reactive "body english" against the potential occurrence for kickback forces created by the digging process. Keep upper arms as close to the upper body as possible to maximize mechanical leverage. The operator should position his back as vertical as possible by bending the legs as required during the digging process. Positioning the left foot ahead of the right foot will enhance proper body position. Do not stand in a flat-footed position. Maintaining a proper operating position is one of the most IMPORTANT and EFFECTIVE procedures for controlling the effects of kickback. Improper operating positions only aggravate the effects of kickback upon the operators. FIGURE 49 depicts a proper operator position that enhances machine control. FIGURE 50, FIGURE 51 and FIGURE 52 depict typical improper operator positions that reduce/minimize machine control.



FIGURE 49



FIGURE 52



FIGURE 50



FIGURE 51

Keep a firm, but steady, grip on the operator handle. Wrap your fingers around the control lever and handle, keeping them cradled between the thumbs and forefingers. REMEMBER- PROPER OPERATOR POSITIONS ENHANCE CONTROL, REDUCE OPERATOR FATIGUE AND INCREASE OVERALL PRODUCTIVITY.

CAUTION

Maintain the operator handle and control lever in good condition and free of moisture, pitch, oil or grease. Wear gloves to improve your grip. A bent or damaged handle/control lever aggravates the effects of kickback upon the operator by limiting control and comfort. The operator handle and/or control lever should be repaired and/or replaced when they become worn and/or damaged from use. Do not operate the DIG-R-MOBILE until such components are repaired and/or replaced. Damage to property and/or personal injury can result.

Always assume that every digging site can include some form of buried obstruction. Always be prepared for unexpected auger contact with buried tree roots, rocks, etc. Under certain operating conditions, striking a buried obstruction can produce a severe and/or sudden kickback force. Operators must maintain physical and mental alertness and be prepared to accommodate this phenomenon. Failure to properly accommodate this phenomenon can result in property damage and/or personal injury.

MINIMIZING KICKBACK FROM A DESIGN STANDPOINT

Applications: All models

1) The DIG-R-MOBILE features an operator handle positioned a specified distance from the center axle of the tires. This distance (or arm length), along with the reactive forces provided by the tires against the job site surface (together referred to as counter-torque), effectively minimize the occurrence of kickback forces being experienced by the operator.

2) The operator handle is biomechanically positioned to enhance control by allowing the operator to exert "body english" against the potential torque and kickback forces generated by the digging process.

3) The DIG-R-MOBILE is designed to utilize the General Equipment Company PN 2121 or PN 2021 auger pin to retain the earth auger to the coupler which is attached to the hydraulic motor driveshaft. These pins are not intended to shear and absorb kickback related forces when the auger comes in sudden contact with a buried object. The pins are utilized for the following reasons:

a) Such an occurrence (pin shear) would result in extensive physical damage to the driveshaft and auger drive hub.

b) Even if the physical damage to the DIG-R-MOBILE could be eliminated and/or minimized from the actual processes, it could require an unknown (and potentially large) number of auger pins to complete the digging process for any specific hole.

c) Even if the cost of the replacement auger pins were not a factor, the resulting productivity produced by the actual process would not be deemed acceptable by industry standards for the DIG-R-MOBILE.

d) Given the infinite number of soil conditions that could be encountered during the actual process, it is impossible to design and supply a specific auger pin to shear at a specific torque value that would produce acceptable operational results for the DIG-R-MOBILE.

e) Given the infinite number of operators and their methods utilized during the actual process, it is impossible to design and supply a specific auger pin to shear at a specific torque value that would produce acceptable operational results for the DIG-R-MOBILE.

f) Given the infinite number of combinations of soil conditions, auger diameter, auger boring head condition, digging depth, mechanical operating condition, operators and operator methods encountered during the actual process, it is impossible to design and supply a specific auger pin to shear

at a specific torque value which would produce acceptable operational results for the DIG-R-MOBILE.

4) For comparison purposes, it is interesting to note that portable electric drills do not utilize any torque limiting or clutch device to allow the drill bit to slip at any specific torque value for drilling purposes. As with the DIG-R-MOBILE such a device would make the drill a useless tool because of the infinite number of potential operating configurations and the inability to design specific components to meet the requirements of each operating configuration.

5) Many portable electric screwdrivers incorporate a torque limiting or clutch device that allows the operator to preset the torque output of the tool to a specific value. This is especially useful and desirable when hardware can be secured to specific torque values according to industry published standards.

6) Portable electric drills and screwdrivers are two separate tools designed for different and specific job applications. The drilling process has different requirements than the fastening process offered by screwdrivers. The operational characteristics of portable electric screwdrivers cannot be confused and/or substituted for the operational characteristics of the DIG-R-MOBILE.

OPERATING THE DIG-R-MOBILE CONTINUED

Applications: All models

9) Auger boring heads are designed for digging in a wide variety of soil types and/or conditions. Each boring head design represents a compromise in overall digging efficiency, productivity and service life for any given soil condition. As a general rule, pressing down on the operator handle is required to initiate the digging process. In most soils of moderate Proctor Densities, augers will dig at rates that will not cause the hydraulic system to overload and deploy the pressure relief valve. In most soft soils of low Proctor Densities (sandy, etc.), it may be necessary to hold up on the operator handle to reduce the digging rate of the auger. The natural tendency of any auger design, in low Proctor Density soil conditions, is to dig at a rate that causes the hydraulic system to overload and deploy the pressure relief valve. In most hard soils of high Proctor Densities (hard clay, etc.), it may be necessary to press down on the operator handle to establish and maintain acceptable digging rates. Proper digging procedure for any given soil condition is the accumulation of actual experience, skill and common sense. For any given soil condition, allow the auger to dig at the rate most comfortable to the operator (utilizing the correct operating position), yet not causing the hydraulic system to overload and deploy the pressure relief valve.



CAUTION

An improper operating procedure can allow the auger to "bind" and/or "bury" itself in the hole. This is usually the result of allowing the auger to feed at an excessive rate. This phenomenon is also characteristic of digging with smaller diameter (2 to 4 inch) augers. In this condition, the DIG-R-MOBILE may not be capable of transmitting ample power to free the auger when the auger rotation direction is reversed. Do not continue to overload the hydraulic system and deploy the pressure relief valve. Excessive heat can be created by the deployment of the pressure relief valve, resulting in component failure.



CAUTION

Damage to property and/or personal injury can result if the operator loses partial and/or full control of the DIG-R-MOBILE while the hydraulic system is in an overload configuration and the pressure relief valve is deployed. If the auger cannot be freed by reversing the rotation direction, STOP the engine. Cycle the directional valve control lever. Remove the DIG-R-MOBILE from the buried auger. Store the DIG-R-MOBILE as outlined in this manual. The buried auger can then be retrieved by various, industry-accepted methods. Contact the Customer Service Department for specific information. There is no charge for this service.

10) Some soil conditions may require more power to dig a specific hole than the DIG-R-MOBILE is capable of delivering for a given auger diameter. This problem is more noticeable in areas of semi-consolidated soils or compacted soils having high Proctor Densities. Examples of such soil types include: soft shale, hardpan and caliche. The power required to dig a hole is directly proportional to the soil resistance encountered by the auger and the square of the auger diameter. For example: a 12 inch diameter auger requires 4 times the power than that of a 6 inch diameter, given identical soil conditions. This problem is best minimized (but not eliminated) by the addition of suitable down force by the operator and by utilizing augers equipped with new, replacement screw bits and teeth. Contact the Customer Service Department for information relative to your specific requirements or operational problems. There is no charge for this service.



DANGER

IT IS A MISCONCEPTION THAT A LARGER DIAMETER HOLE CAN BE OBTAINED IN ANY SOIL CONDITION BY FIRST DIGGING AN INITIAL HOLE WITH A SMALLER, "PILOT" AUGER AND THEN UTILIZING A LARGER

DIAMETER AUGER TO "REAM" TO THE DESIRED SIZE. THIS METHOD WILL NOT ALLOW THE AUGER SCREW BIT TO PRODUCE SUFFICIENT DIRECTIONAL STABILITY FOR THE LARGER DIAMETER AUGER DURING THE "REAMING" PROCESS. THIS METHOD WILL RESULT IN PROPERTY DAMAGE, LOSS OF OPERATOR CONTROL AND/OR PERSONAL INJURY.

11) When digging in areas filled with small tree roots, small rocks or other buried obstructions, allow the auger teeth to "chip away" at the obstruction until the auger can pass by (by working the object loose) or go through it (as in the case of penetrating tree roots). This technique usually involves holding up on the operator handle and establishing a minimal feed rate for the auger. Proper operator position will minimize the potential effects of kickback forces being generated by the auger teeth contacting the object. As with any hole digging procedure, the mechanics of this technique require the accumulation of actual experience and common sense to maximize its effectiveness. Many times the size and nature of a buried object will simply prevent the auger from passing by or going through it. Continued digging with the DIG-R-MOBILE will only contribute to property damage, operator fatigue and/or injury. Instead, remove the buried object with a shovel or other suitable tool and proceed to dig the hole with the DIG-R-MOBILE to the desired depth.



CAUTION

Some job applications may encounter buried obstructions that are too massive in size to allow the usage of a machine the size and/or with the operating limitations of the DIG-R-MOBILE. Utilization of the DIG-R-MOBILE on these work sites can result in property damage and/or personal injury. Exercise proper common sense by selecting the proper size and/or type of equipment for the specific job application.

12) In most soil conditions, the auger will retract with less effort if allowed to rotate in a clockwise direction at a slow speed. This procedure, however, will leave more loose soil at the bottom of the hole. To minimize the amount of loose soil that remains at the bottom of the hole, stop the rotation before retracting the auger. Proper procedure for obtaining the cleanest, most usable hole for any given soil condition requires the accumulation of actual skill, experience and common sense.

13) The directional valve control lever regulates the digging process by controlling the deployment of the auger and its rotation direction. Keep a firm grip on it during operation. As with any motion control device, it requires constant and proper maintenance to function as intended.



DANGER

DO NOT OPERATE THE DIG-R-MOBILE IF THE SELF-CENTERING MECHANISM OF THE DIRECTIONAL CONTROL VALVE DOES NOT PROPERLY FUNCTION. WHEN THE LEVER IS RELEASED, THE DIRECTIONAL CONTROL VALVE MUST RETURN TO THE NEUTRAL POSITION WITHOUT ANY APPLIED EXTERNAL FORCE FROM THE OPERATOR. IMPROPER VALVE LEVER OPERATION CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

14) Both the auger teeth and screw bit must be replaced when signs of excessive wear are visible. A regularly scheduled maintenance program will increase the service life of the auger and increase productivity by substantially reducing operator fatigue. An auger requiring replacement of the auger teeth and screw bit is depicted in FIGURE 53.



FIGURE 53



CAUTION

Do not utilize an auger with the teeth and screw bit worn past their specific service limits. Excessive wear to teeth and screw bit will allow the auger flighting to wear in a tapered or inverted cone configuration. The worn boring head may actually be only capable of digging a hole 60 to 75 percent the nominal diameter of the auger. This configuration will allow the auger flighting to "bind" within the hole and substantially reduce operator control and productivity.

15) Avoid placing serious stress to the back and other lower body members. Always lift in a straight line with your legs. Maintain the back in a vertical position as allowed by the digging process. Proper wrist position during the digging process can minimize and/or reduce stress and strain related

damage potential to this body area. Operator control can be enhanced and fatigue reduced by attempting to keep wrists as perpendicular to the operator handle as feasible during the digging process. FIGURE 54.



FIGURE 54

16) For moving the the DIG-R-MOBILE between each hole location on the job site, stop the auger rotation and store the auger with the SNAP-LOK control lever in the travel position to minimize the possibility of personal injury. Maneuver the DIG-R-MOBILE with the operator handle at waist level. FIGURE 55.



FIGURE 55

This configuration helps maximize body leverage and mechanical strength. Special care must be exercised in slippery conditions and in difficult, overgrown terrain to minimize any trip and fall potential. This can be accomplished with proper attire, including shoes and the removal of any trip and fall hazard BEFORE attempting to utilize the DIG-R-MOBILE on the job site.



DANGER

STOP THE AUGER ROTATION AND STORE THE AUGER WITH THE SNAP-LOK CONTROL LEVER IN THE TRAVEL POSITION BETWEEN EACH HOLE. FAILURE TO PROPERLY STORE THE AUGER WHILE IN TRANSIT ON THE JOB SITE CAN REDUCE MACHINE CONTROL, RESULTING IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

STOPPING THE DIG-R-MOBILE

Applications: All models

1) Stopping the DIG-R-MOBILE is accomplished by first reducing the engine speed to the specific, low speed idle position and:

a) Turning the engine ignition ON/OFF switch to the OFF position and/or

b) Turning the remote engine ignition ON/OFF switch to the OFF position.

2) When the engine is not running, turn the fuel tank ON/OFF valve to the OFF position to minimize the potential for fuel flooding the carburetor and/or entering the engine crankcase and/or impacting upon the environment.

TEMPORARY STORAGE FOR THE DIG-R-MOBILE WHILE ON THE JOB SITE

Applications: All models



DANGER

WHEN STORING THE DIG-R-MOBILE ON THE JOB SITE, TURN THE FUEL TANK ON/OFF VALVE TO THE OFF POSITION TO MINIMIZE THE POSSIBILITY OF FUEL FLOODING THE CARBURETOR AND/OR ENTERING THE COMBUSTION CHAMBER AND/OR IMPACTING UPON THE ENVIRONMENT. SUCH AN OCCURRENCE CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

1) The DIG-R-MOBILE is intended to be stored on flat terrain while on the job site and is not equipped with a parking brake system. A DIG-R-MOBILE that is to be stored on a job site with sloping terrain will require the additional use of proper blocking, if and where required, to prevent unexpected tire movement.

2) The tires of the power unit and engine cradle should be in full contact with the ground while the unit is not in use during both job site use and normal storage.

ADDING AND REMOVING NONFLIGHTED AND FULL FLIGHTED AUGER EXTENSIONS

Applications: All models



CAUTION

While this text covers the use of all models of the 660 DIG-R-MOBILE during the adding and removing of nonflighted and full flighted auger extensions, several variances exist between various models with the applicable engine start and stop procedures. Consult the applicable STARTING THE ENGINE WITH THE AUGER ATTACHED for specific information.

Many digging applications require a hole deeper than that provided by standard length augers. For such requirements, both nonflighted and full flighted auger extensions are available. The nonflighted auger extension extends the digging depth by an additional 15 inches (381 mm). Full flighted auger extensions are available in diameters up to 12 inches (305 mm) and with a 36 inch (914 mm) effective digging length.



CAUTION

Utilization of non flighted and full flighted auger extensions requires additional operator experience, skill and common sense over that of an introductory or novice level of expertise. The manufacturer has no control over the experience, skill and common sense levels of each operator of the DIG-R-MOBILE. Utilization of non flighted and full flighted auger extensions requires the accumulation of actual hole digging experience, skill and common sense. Each operator must decide if his own experience, skill and common sense level is sufficient to allow him to proceed with the utilization of non flighted and full flighted auger extensions for any given and/or specific job application.

Follow this accepted procedure for utilizing both non flighted and full flighted auger extensions to extend the digging depth:

1) Dig to the approximate full depth of the auger, utilizing the described operating instructions. Remove as much loose soil from the hole as possible with the auger rotating at a slower rotational speed.

2) STOP the engine. Cycle the directional valve control lever. Remove the auger from the hole. Disconnect the spark plug wire to prevent accidental engine starting. Close the fuel tank breather vent (if so equipped). Turn the fuel tank ON/OFF valve to the OFF position.

3) Disconnect and remove the auger from the DIG-R-MOBILE. Place the auger in the hole. Attach the auger extension to the auger and secure with an auger pin. The DIG-R-MOBILE can now be connected to the auger extension and secured with an auger pin. Reconnect the spark plug wire. FIGURE 56.

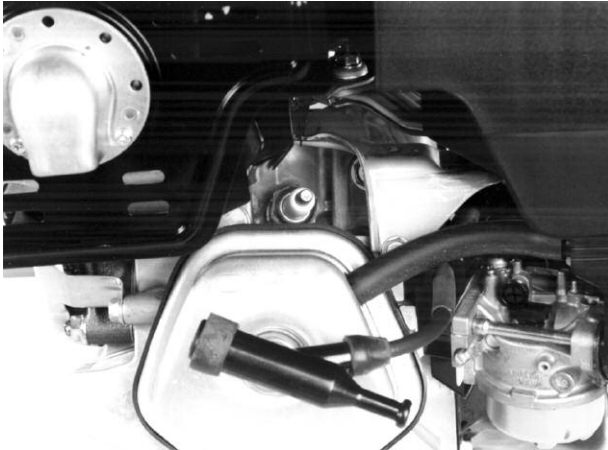


FIGURE 56

4) Follow the instructions outlined for starting and operating the DIG-R-MOBILE. Use extra caution when starting the engine with the auger in the hole. Proceed to dig to the desired depth or to the full depth of the auger extension.

5) Use of the non flighted auger extension to extend the digging depth is limited to one unit. For multiple uses of full flighted or continuous flighted auger extensions, repeat the above procedure until the desired digging depth is achieved.

DANGER

NEVER UTILIZE MORE THAN ONE NON FLIGHTED AUGER EXTENSION TO INCREASE THE OVERALL DIGGING DEPTH. THE NON FLIGHTED AUGER EXTENSION IS NOT EQUIPPED WITH AUGER FLIGHTING TO ELEVATE THE LOOSE BORINGS FROM THE HOLE. CONSEQUENTLY, MULTIPLE USES OF NON FLIGHTED AUGER EXTENSIONS WILL ALLOW THE AUGER TO "BURY" ITSELF IN THE HOLE. SUCH USE CAN LEAD TO LOSS OF OPERATOR CONTROL AND PERSONAL INJURY WHILE DIGGING.

After the desired digging depth has been achieved, both non flighted and full flighted auger extensions are removed from the hole by utilizing this accepted procedure:

6) Remove as much loose soil from the hole as possible with the auger rotating at a slower rotational speed. STOP the engine. Cycle the directional valve control lever. Disconnect the spark plug wire to prevent accidental engine starting. Close the fuel tank breather vent (if so equipped). Turn the fuel tank ON/OFF valve to the OFF position.

7) Lift the auger extension(s)/auger and the DIG-R-MOBILE up far enough out of the hole so that one complete auger extension is clear of the hole. Block the remaining auger extension(s)/auger string with an auger fork to prevent them from falling back into the hole. An additional Crew Member will usually be required. FIGURE 57.



FIGURE 57

8) Disconnect the DIG-R-MOBILE from the blocked auger extension(s)/auger string. Store the DIG-R-MOBILE on the job site as outlined in this manual. Remove the auger extension that is clear of the hole from the auger extension(s)/auger string.

9) Reconnect the DIG-R-MOBILE to the remaining auger extension(s)/auger string. Repeat the process until the lead auger is recovered.

10) Reconnect the engine spark plug wire.

CAUTION

THE PROCEDURE OUTLINED FOR THE USE OF BOTH NON FLIGHTED AND FULL FLIGHTED AUGER EXTENSIONS OFFERS THE MOST ADAPTABLE METHOD OF EXTENDING THE DIGGING DEPTH FOR THE WIDEST CROSS SECTION OF PROBABLE OPERATORS. THIS PROCEDURE TAKES INTO ACCOUNT ANTICIPATED OPERATOR EXPERIENCE, SKILL AND COMMON SENSE. THE MANUFACTURER IS AWARE THAT NOT ALL OPERATORS WILL ELECT TO FOLLOW THIS PROCEDURE. THE MANUFACTURER HAS NO CONTROL OVER INDIVIDUAL OPERATING PROCEDURES AND/OR DECISIONS. INDIVIDUAL OPERATORS MAY ELECT TO CHOOSE OTHER PROCEDURES IN AN EFFORT TO REDUCE THE ASSOCIATED PRODUCTION COSTS. THE RESULTING MACHINE CONFIGURATIONS CAN PLACE THE OPERATOR HANDLE ALMOST LEVEL WITH (OR EVEN ABOVE) THE SHOULDERS OF THE OPERATOR. AT THIS HEIGHT LEVEL, THE DIG-R-MOBILE IS DIFFICULT TO CONTROL AGAINST POSSIBLE KICKBACK FORCES. THIS IS NOT A MANUFACTURER APPROVED PROCEDURE. PERSONAL SAFETY CAN NEVER BE GUARANTEED FOR ANY GIVEN AND/OR SPECIFIC JOB APPLICATION FOR ANY TYPE OF POWERED EQUIPMENT. THE ACCEPTED PROCEDURE, AS OUTLINED IN THIS OPERATOR'S MANUAL, IS STRONGLY RECOMMENDED. THE MANUFACTURER CANNOT CONDONE AND/OR APPROVE ANY OTHER PROCEDURE.

OPERATING HYDRAULIC POWERED TOOLS OFF THE AUXILIARY TOOL CIRCUIT

The DIG-R-MOBILE is designed to operate a wide variety of hydraulically powered tools off the auxiliary tool circuit for light to medium duty construction related projects. These tools are produced by such manufacturers as Stanley, RGC and Fairmont. Popular tools for the construction related markets include jackhammers, saws, pumps, post pullers and post drivers. Many years ago, the manufacturers of hydraulic tools decided to establish industry wide design standards to ensure more consistent and productive operation. Tools supplied by members of the Hydraulic Tool Manufacturers Association fall into three general categories of flow requirements:

- Type I: 6 GPM (23 lit/min)
- Type II: 8 GPM (30 lit/min)
- Type III: 12 GPM (45 lit/min)

All hydraulic tools utilize a system relief pressure of 2000 PSI (140 kg/cm²).

The DIG-R-MOBILE features a hydraulic system conforming to Hydraulic Tool Manufacturers Association (HTMA) Type II performance parameters. Specially designed Hydraulic Tool Manufacturers Association quick type couplers are utilized. These couplers feature a unique, flush mount configuration that facilitates easy cleaning and minimizes the potential for foreign particle contamination.

With a conventional hydraulic pump, improper coupler connections will allow the oil to recirculate within the cavity until excessive operating temperatures result in catastrophic damage. To prevent this occurrence, the DIG-R-MOBILE utilizes a specially designed hydraulic pump that incorporates an integral pressure relief valve. This valve senses overload conditions created by improper hose connections and opens to redirect the oil flow through a third line back to the reservoir. The action effectively safeguards the hydraulic system components as well as the hydraulic tool against inadvertent damage. FIGURE 58 and FIGURE 59

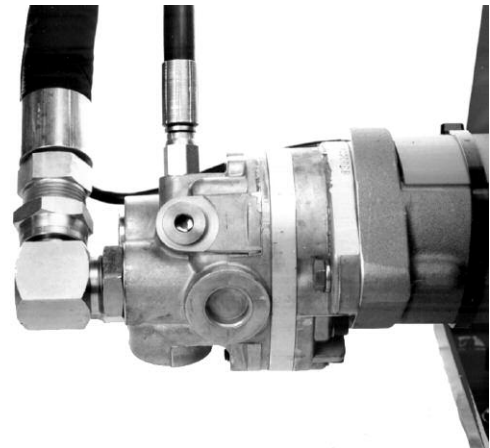


FIGURE 58

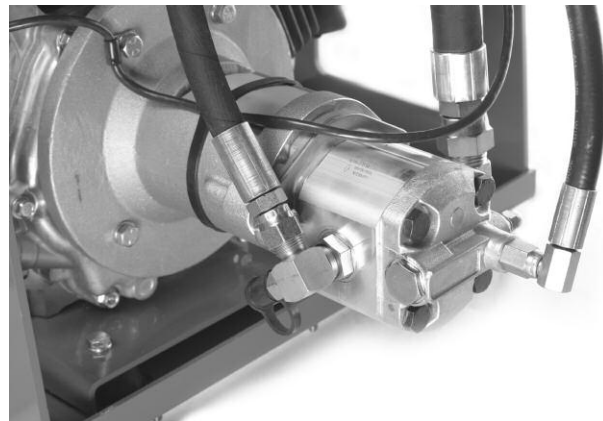


FIGURE 59

The hydraulic system components have an operating temperature range of -20°F (-28°C) to 200°F (93°C). The maximum operating temperature of the oil will usually be the determining factor for the productive operation of any hydraulic tool. Excessive temperatures will allow the tool to deliver substantially slower operational speeds or performance parameters. Excessive oil temperatures will also allow the tool to become hot to the touch and minimize or even prevent direct operation until it cools to an acceptable temperature level.

By the nature of their operation, many hydraulic tools create great amounts of heat energy that must be rejected through the hydraulic system or directly to the atmosphere by normal convection methods. This especially applies to jackhammers or any device that delivers impact energy during operation. During operation with hydraulic tools, the maximum oil reservoir temperature is limited to 140°F (60°C). Operation of tools with temperatures in excess of this value will significantly reduce the corresponding productivity and duty cycles. If there are any questions regarding the suitability or practicality of operating any hydraulic tool from the auxiliary tool circuit, contact the Customer Service Department BEFORE utilization. There is no charge for this service.

To install a hydraulic tool to the auxiliary tool circuit of the DIG-R-MOBILE, proceed as follows:

1) The DIG-R-MOBILE utilizes an open center type hydraulic system. The hydraulic tool MUST be designed (or configured) to be operated with an open center hydraulic system. If there are any questions regarding the suitability of a specific hydraulic tool for use with the DIG-R-MOBILE, contact the tool manufacturer for specific information.

⚠ DANGER

IMPROPER TOOL CONFIGURATION CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

2) Select the proper hydraulic tool for the application. Because of heat rejection considerations, many tools may have restricted or limited operational success with the DIG-R-MOBILE. Jackhammers are restricted to a 70 lbs (31 kg) class or less. Ambient air temperatures will normally restrict the duty cycle for jackhammers to 50% or less. The auxiliary tool circuit was intended to operate hydraulic tools on a restricted duty cycle basis. The DIG-R-MOBILE was not designed as a primary power source for hydraulic tools. Duty cycles in excess of 50% for any specific tool must be properly evaluated. It is important to determine the hydraulic system of the DIG-R-MOBILE has sufficient capacity to restrict the maximum oil temperature to within the limit as set by the tool manufacturer. If determined the DIG-R-MOBILE does not have proper heat rejection capacity for any specific tool or job

application, an alternative power source must be utilized. 3) Determine the hydraulic tool is equipped with the proper quick type couplers. The DIG-R-MOBILE utilizes standard 1/2 inch, HTMA type quick couplers. The input or pressure port of the tool MUST be equipped with a female coupler configuration to facilitate proper attachment. FIGURE 60



FIGURE 60

4) Evaluate the proper length of hoses required for the job application. Unlike air powered tools, hydraulic tools require the use of both pressure and return line hoses. The pressure hose transfers high-pressure oil from the pump to the tool. After the energy has been converted into work by the tool, the return line hose transfers low-pressure oil back to the oil reservoir. Excessive length increases the amount of back pressure created by the friction of the oil traveling through the hose. Maximum allowable back pressure limits vary by the specific tool and tool manufacturer. Contact the tool manufacturer for information relative to the maximum allowable back pressure limits for the tool. The thick rubber jacket does not allow a hose to efficiently transfer heat energy to the surrounding atmosphere by normal convection methods. Consequently, there is no advantage to operating longer than required hoses for heat transfer considerations. As a general rule, always operate a tool with the shortest hoses required for the specific job application. Contact the tool manufacturer for information relative to the recommended hose material specifications and lengths for the specific job application.

- 5) Inspect the tool BEFORE utilization to determine that:
- a) All fastener connections are properly torqued.
 - b) All safety and operational decals are readable.
 - c) All hoses are in proper condition to operate at the specified pressure limit of 2000 PSI (140 kg/cm²).

d) All quick type couplers are in proper condition to operate at the specified pressure limits.

e) All accessories are in proper mechanical condition to allow them to function as intended.

6) Determine the appropriate safety apparel and equipment required for the job application. For example, when utilizing a jackhammer, appropriate safety eyewear, gloves, shoes and other related equipment are required. Operation of hydraulic tools MUST conform to all applicable OSHA and locally recognized regulations.

7) Stop the engine of the DIG-R-MOBILE BEFORE attempting to connect the hydraulic tool to the auxiliary tool circuit. Cycle the control valve lever to relieve pressure and determine the valve properly returns to the neutral position.

8) Disconnect the remote engine ON/OFF ignition switch harness. Disconnect the quick type couplers on both hoses.

9) Clean the external surfaces of the quick type couplers with an appropriate solvent. Do not attempt to expose the internal surfaces of a quick coupler by using a foreign object to apply a force against the spring.



CAUTION

Observe all applicable safety precautions for the solvent.



DANGER

DO NOT EXPOSE THE INTERNAL SURFACES OF A QUICK COUPLER BY USING A FOREIGN OBJECT TO APPLY A FORCE AGAINST THE SPRING. SUCH ACTION CAN RESULT IN HIGH PRESSURE OIL ESCAPING FROM THE QUICK COUPLER AT HIGH VELOCITY, RESULTING IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

10) Attach the quick couplers together by properly matching the male and female couplers between the DIG-R-MOBILE and tool. The input or pressure port of the tool MUST be properly equipped with a female coupler configuration to facilitate proper attachment. FIGURE 61.



FIGURE 61



CAUTION

IMPROPER QUICK COUPLER CONNECTIONS AND/OR CONFIGURATIONS WILL AFFECT PRODUCTIVITY AND SERVICE LIFE AND CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

11) Start DIG-R-MOBILE according to instructions as outlined in this manual. Operate the engine at the maximum governed speed to deliver the nominal 8 GPM (19 lit/min) flow rate.

12) Operate the hydraulic tool as per the information supplied by the tool manufacturer. If specific information or operational assistance is required, contact the tool manufacturer. The hydraulic pump is equipped with an internal pressure relief valve. This valve will open and redirect the oil flow back into the reservoir in the event the system pressure exceeds 2500 PSI (175 kg/cm²). This action is intended to provide protection for the tool and the hydraulic system in the event of an excessive pressure rise.

NOTE: If the tool fails to function, determine the quick type couplers are properly connected. Improper connections will allow the pressure relief valve to redirect the oil back into the reservoir. This action will be denoted by a high pitched, "squealing" noise from the hydraulic pump accompanied by the engine operating under an excessive load. This operating configuration will also produce excessive heat within the hydraulic system. Return the ON/OFF or directional control mechanism of the tool to the neutral position and determine the cause for the problem. Refer to the **Troubleshooting** section for additional information.

13) When the job application is completed, return the ON/OFF or directional control mechanism of the tool to the neutral position. STOP the DIG-R-MOBILE according to the instructions as supplied in this manual. Cycle the directional valve control lever.



Know what's below.
Call before you dig.

- 14) Disconnecting the tool from the auxiliary tool circuit requires the coupling process to be reversed.
- 15) Reconnect the auxiliary tool circuit quick couplers.
- 16) Reconnect the remote engine ignition ON/OFF switch harness.
- 17) Store the DIG-R-MOBILE, hydraulic tool and hoses by acceptable methods and procedures.

Service



CAUTION

DO NOT PERFORM SERVICE AND/OR REPAIR RELATED FUNCTIONS WITHOUT THE POWER UNIT OF THE DIG-R-MOBILE IN CONTACT WITH THE SURFACE AND THE ADDITIONAL USE OF PROPER BLOCKING, IF AND WHERE REQUIRED, TO PREVENT UNEXPECTED TIRE MOVEMENT. IMPROPER STORAGE PROCEDURES FOR SERVICE RELATED FUNCTIONS CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

HYDRAULIC SYSTEM MAINTENANCE, INCLUDING:

- a) CHANGING THE HYDRAULIC RESERVOIR OIL
- b) CLEANING THE SUCTION STRAINER AND RETURN LINE DIFFUSER
- c) REPLACING THE RETURN LINE FILTER

Applications: All models

Tools Required:

- 1 each, large, adjustable wrench
- 1 each, small, clean funnel with a flexible extension spout
- 1 each, suitable oil drain container
- 1 each, suitable oil filter wrench

Changing the hydraulic reservoir oil will require a level work surface. Visually inspect the oil in the reservoir before each use. A slight change in the color is normal with use. However, a change to a deep, dark color or a noticeable increase in viscosity would indicate a serious maintenance problem. Other physical changes requiring immediate attention would also include a burnt odor or fluid containing metal filings.

1) Normal use would require the hydraulic system oil to be changed every 250 hours of operation or a minimum of once each operating season. Change the oil more often as necessary if the DIG-R-MOBILE is operated in extremely dusty or dirty conditions.

2) Wipe any dust or dirt from the oil drain plug located under the reservoir. Remove the plug with the adjustable wrench and allow the oil to completely drain from the reservoir into a suitable container. Replace the oil drain plug and tighten securely with the adjustable wrench. Dispose of the used oil per accepted procedures.

3) Using the adjustable wrench, disconnect the suction hose from the reservoir fitting. Use the adjustable wrench to remove the suction strainer from the reservoir. Clean and inspect the suction strainer with an appropriate solvent. FIGURE 62.

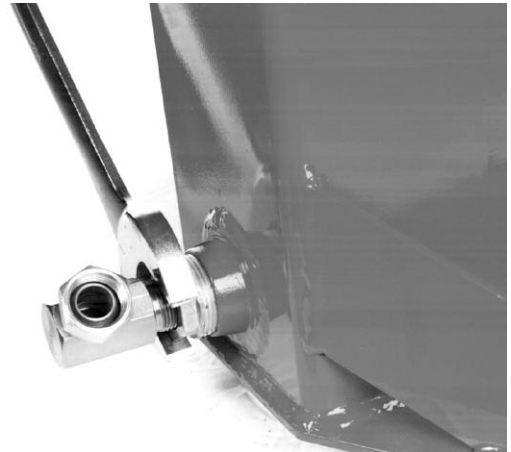


FIGURE 62



CAUTION

Observe all applicable safety precautions for the solvent.

4) The suction strainer is equipped with an internal bypass valve, in the event the mesh becomes plugged with foreign material. The valve will automatically open and allow oil to flow to the pump. This occurrence will minimize internal damage to the hydraulic pump and motor due to cavitation. Determine the valve opens properly when pushed by hand. FIGURE 63. An improperly functioning valve will require the suction strainer to be replaced with a factory-approved replacement only. Apply a small amount of sealing adhesive to the external threads when reinstalling. Tighten the strainer with the wrench until tight and the fitting is in proper orientation to connect to the suction hose. Reconnect the suction hose to the fitting.



Know what's below.
Call before you dig.



FIGURE 63

5) Using the oil filter wrench, remove the oil filter element from the base mount. The filter element is not intended to be reused. Dispose of the used filter element per accepted procedures.

6) The hydraulic system of the DIG-R-MOBILE is equipped with a return line diffuser which is intended to disperse the oil returning to the reservoir, minimize the occurrence of cavitation and reduce the overall temperature of the oil. Unless the diffuser becomes damaged or plugged as a result of contamination, there is no reason to remove and inspect it on a regular basis. However, in the event the diffuser requires removal from the reservoir, proceed as follows:

a) Using the adjustable wrench, remove the diffuser from the reservoir.

b) Clean and inspect the diffuser with an appropriate solvent.

CAUTION

Observe all applicable safety precautions for the solvent.

c) Apply a small amount of sealing adhesive to the external threads. Tighten the diffuser with the wrench until tight. The base mount should be aligned to position the filter element in a vertical orientation.

7) Install a replacement 10-micron filter element, General Equipment Company Part Number 660-0320 or acceptable substitute. Lubricate the rubber-sealing gasket with a film of oil. Hand tighten ONLY approximately 3/4 turn after the element gasket contacts the base mount.

8) Using the funnel, pour 21 US quarts (20 lit) of General Equipment Company Hydraulic Oil, PN 999-12, or a high grade, SAE 10W40 oil containing a minimum of 0.125 percent zinc antiwear additive into the reservoir through the

filler cap/dipstick. Refer to **HYDRAULIC SYSTEM OIL RECOMMENDATIONS** for specific information. The oil level in the reservoir is to be maintained within the area marked on the dipstick. This procedure determines the correct oil level for the reservoir. Correct oil level is important to ensure proper operation of the hydraulic system and minimize the effects of cavitation and excessive operating temperatures. Maintaining the oil level too high will cause oil to escape from the filler cap due to thermal expansion during operation.

9) Replace the oil filler/cap/dipstick. Wipe off any excess oil spilled on the reservoir. Dispose of the used oil per accepted procedures.

10) Inspect the DIG-R-MOBILE for loose, worn or damaged parts. Replace any questionable part or assembly with a genuine, approved factory replacement part only. Do not attempt any maintenance or repair work not described in the Operator Manual. Have such work performed at your dealer's servicing shop.

HYDRAULIC SYSTEM OIL RECOMMENDATIONS

Applications: All models

To ensure maximum hydraulic motor performance and service life it is extremely important that premium grade hydraulic oil be utilized. Use a minimum API 10W40 motor oil marked with minimum service classifications SF or CD containing a minimum of 0.125% zinc anti-wear additive by weight. The following are approved oils meeting these requirements:

Union 76 Super Oil 20W40
Shell Rotella T and TX 15W40
Amoco LDO 10W40
Texaco 1814 Havoline Supreme 10W40
Texaco 2109 URSA Oil Super Plus SAE 15W40
Texaco 2167 Uratex 20W40
Kendall Superb 10W40
Penzoil 10W40
Tennaco 10W40
Mobil DTE26
Sunvis 754 and 764

ADJUSTING THE HYDRAULIC SYSTEM FLOW RATE

Applications: All models

Tools Required:
1 each, Phillips head screwdriver
1 each, flow control device

Also Required:
Appropriate safety related apparel/equipment, including, but not limited to eyewear, hearing protection, gloves, shoes, etc.

CAUTION

Wear safety glasses and other appropriate safety equipment when performing any service related work on the DIG-R-MOBILE. Caution all onlookers about the possibility of flying debris and the potential for injury.

The hydraulic system is designed to deliver an 8 GPM (30 lit/min) nominal flow rate. The system is tested and calibrated at the factory prior to shipment. The hydraulic pump is of the fixed displacement, pressure compensated type. The flow rate should remain consistent throughout its normal service life for any specific pressure range.

The 8 GPM (30 lit/min) nominal flow rate allows the hydraulic motor to rotate earth augers at a 144-RPM (no load) nominal speed. Years of design and manufacturing experience suggest this nominal auger rotation speed delivers acceptable performance rates over the widest range of diameters and soil classifications. The nominal flow rate also corresponds to the Hydraulic Tool Manufacturers Association (HTMA) Class II flow for use in powering a wide range of hydraulically powered tools, including: jackhammers, saws, post drivers and post pullers. Optimum performance of these tools requires the hydraulic system to be capable of providing the appropriate flow when measured across the tool connections. Deviation from the nominal flow rates should be no greater than plus or minus 10% at the rated system pressure of 2000 PSI (140 kg/cm²).

If it is suspected the hydraulic system flow rate requires testing and recalibration, proceed as follows:

- 1) Position the DIG-R-MOBILE with the power unit in contact with a flat, suitable surface. Block the tires as necessary to prevent accidental tire movement.
- 2) Cycle the directional valve control lever in the forward and reverse directions and determine it properly returns to the neutral position.
- 3) Remove the auger from the machine and place the auger driveshaft in the forward position toward the power unit with the SNAP-LOK control lever.
- 4) Disconnect the remote engine ignition ON/OFF switch harness.
- 5) Install the flow control device between the quick couplers on the pressure side of the hydraulic system. This is the hydraulic hose from the output (pressure) side of the hydraulic to the inlet (pressure) side of the directional control valve. Install the flow control device according to any required flow direction. General Equipment Company Service Tool 660-7001 is depicted and utilized for all service related work

in this manual. This service tool incorporates both flow control and load devices and is available for sale or rent. Contact the Customer Service Department for additional information. FIGURE 64.



FIGURE 64

6) Start the engine according to the procedure outlined in this manual and the material supplied by the engine manufacturer.

7) Using the screwdriver, adjust the high-speed throttle stop screw and throttle control lever until the engine speed produces an 8 GPM (30 lit/min) flow rate. FIGURE 65

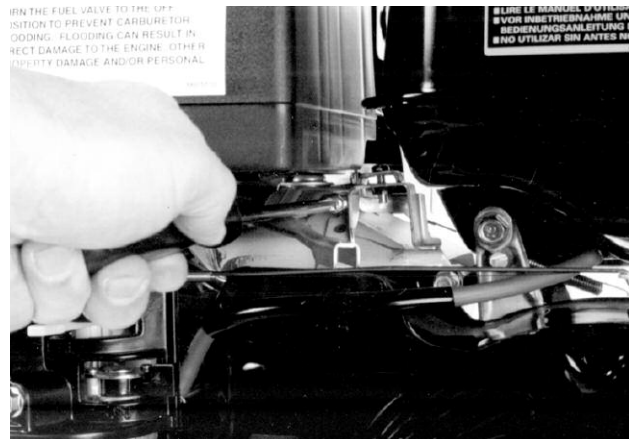


FIGURE 65

FIGURE 66 depicts the 8 GPM (30 lit/min) flow rate



FIGURE 66

- 8) For reference only, the engine speed required to produce an 8 GPM (30 lit/min) flow rate is approximately 3450 RPM.
- 9) Disconnect the adjustable flow control device. Properly reconnect the quick couplers.
- 10) Reconnect the remote engine ignition ON/OFF switch harness.

ADJUSTING THE HYDRAULIC SYSTEM RELIEF VALVE SETTING

Tools Required:

- 1 each, Phillips head screwdriver
- 1 each, flow meter device
- 1 each, adjustable loading device

Also Required:

Appropriate safety related apparel and equipment, including, but not limited to eyewear, gloves, shoes, etc.



CAUTION

Wear safety glasses and other appropriate safety equipment when performing any service related work to the DIG-R-MOBILE. Caution all onlookers about the possibility of flying debris and the potential for injury.

The hydraulic system is designed to deliver an 8 GPM (30 lit/min) nominal flow rate at 2000 PSI (140 kg/cm²) pressure relief valve setting. This pressure valve is the initial (or sometimes referred to as cracking) pressure required to move the relief valve against an established spring force (a

known constant). Both the flow rate and pressure setting are tested and calibrated at the factory prior to the shipment of the DIG-R-MOBILE. Because the hydraulic pump is of the fixed displacement, pressure compensated type, the flow rate for any given operating pressure should remain consistent throughout its normal service life.

The 8 GPM (30 lit/min) nominal flow rate allows the hydraulic motor to rotate earth augers at a 144-RPM (no load) nominal speed. Years of design and manufacturing experience suggest this nominal auger rotation speed delivers acceptable performance rates over a wide range of diameters and soil classifications. The nominal flow rate and the pressure relief valve setting also correspond to the Hydraulic Tool Manufacturers Association (HTMA) Class II flow for use in powering a wide range of hydraulically powered tools, including: jackhammers, saws, post drivers and post pullers. Optimum performance of these tools requires the hydraulic system to be capable of providing the appropriate flow when measured across the tool connections. Deviation from the nominal flow rates should be no greater than plus or minus 10% at the rated system pressure of 2000 PSI (140 kg/cm²).

The pressure value directly affects the digging performance of the DIG-R-MOBILE by determining the amount of torque produced by the hydraulic motor. The digging torque produced by the DIG-R-MOBILE is not a direct function of engine horsepower. Instead, the digging torque is a direct function of the pressure value of the hydraulic system. In turn, the pressure value capable of being delivered by the hydraulic system is a direct function of available horsepower. If it is suspected the hydraulic system pressure relief valve setting requires testing and recalibration, it will be first required to determine the hydraulic pump is delivering the required flow rate. Proceed as follows:

- 1) Position the DIG-R-MOBILE with the power unit in contact with a flat, suitable surface. Block the tires as necessary to prevent accidental tire movement.
- 2) Cycle the directional valve control lever in the forward and reverse directions and determine it properly returns to the neutral position.
- 3) Remove the auger from the machine and place the auger driveshaft in the forward position toward the power unit with the SNAP-LOK control lever.
- 4) Disconnect the remote engine ignition ON/OFF switch harness.

5) Install the adjustable flow control and load device between the quick couplers on the pressure side of the hydraulic system. FIGURE 67. This is the hydraulic hose from the output (pressure) side of the hydraulic pump to the inlet (pressure) side of the directional control valve. Install the adjustable flow control device according to any required flow direction. General Equipment Company Service Tool 660-7001 is depicted and utilized for all service related work in this manual. This service tool incorporates both adjustable flow control and load devices and is available for sale or rent. Contact the Customer Service Department for additional information.



FIGURE 67



DANGER

DO NOT INSTALL THE LOAD DEVICE ON THE RETURN SIDE OF THE HYDRAULIC SYSTEM. INSTALLING THE LOAD DEVICE BETWEEN THE OUTLET SIDE OF THE DIRECTIONAL CONTROL VALVE AND THE RETURN LINE INTO THE RESERVOIR IS NOT PERMITTED. IN THIS OPERATING CONFIGURATION THE BACK PRESSURE CREATED DURING THE TESTING/CALIBRATION PROCESS CAN ALLOW THE FLOW CONTROL DEVICE, LOAD DEVICE AND DIRECTIONAL CONTROL VALVE TO EXPLODE, RESULTING IN PROPERTY DAMAGE AND/OR EXTERNAL INJURY.

6) Slowly turn the threaded knob of the load device counterclockwise (this action moves the knob away from the body) to its stop. All the color-coded rings will be exposed. In this configuration, the device does not apply any restriction or load against the pressure relief valve. FIGURE 68



FIGURE 68.

7) Start the engine according to the procedure outlined in this manual and the material supplied by the engine manufacturer.

8) Using the screwdriver, adjust the high-speed throttle stop screw and throttle control lever until the engine speed produces an 8 GPM (30 lit/min) flow rate. FIGURE 69 depicts the high-speed throttle stop screw and throttle control lever for the Honda engine. FIGURE 70 depicts the 8 GPM (30lit/min) flow rate.

NOTE: For reference only, the engine speed required to produce an 8 GPM (30 lit/min) flow rate is approximately 3450 RPM.



FIGURE 69

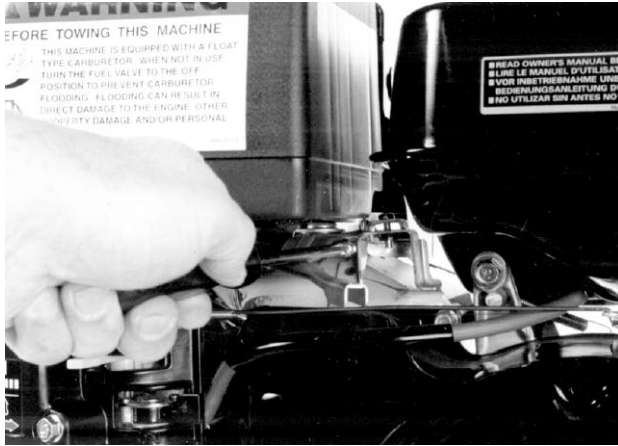


FIGURE 70

9) Stop the engine of the DIG-R-MOBILE. Cycle the directional valve control lever in the forward and reverse directions and determine it properly returns to the neutral position.

10) Disconnect the hydraulic hoses that connect from the directional control valve to the hydraulic motor. Disconnect ONLY at the directional control valve location. Drain the oil from the hoses into a suitable container. Plug both valve fittings with General Equipment Company Service Tool Part 660-7020. Secure tight. FIGURE 71.



FIGURE 71

11) Using the wrench, remove the cover protecting the hydraulic system relief valve. FIGURE 72.

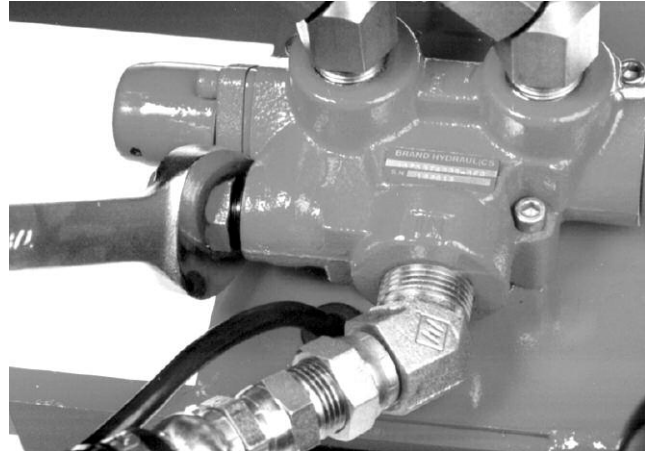


FIGURE 72

12) Start the engine according to the procedure outlined in this manual and the material supplied by the specific engine manufacturer. Advance the engine to the rated high speed.

13) SLOWLY pull the right side of the directional control valve lever to its maximum set position. This action will apply a load against the hydraulic pump and relief valve.

14) When the load overpowers the relief valve a sharp, high pitched, squealing noise will be heard. This noise signals the relief valve is opening to allow the oil to bypass directly through the directional control valve and back to the reservoir. When this occurs, read the corresponding pressure depicted on the pressure gauge.

15) Release the directional valve control lever to its neutral position.

16) If the pressure depicted on the gauge is greater than 2000 PSI (140 kg/cm²), use the Allen type wrench to decrease the pressure limit to acceptable level by turning the screw counter-clockwise in quarter turn increments (left hand rotation).

If the pressure depicted on the gauge is less than 2000 PSI (140 kg/cm²) use the Allen type wrench to increase the pressure limit to acceptable level by turning the screw clockwise in quarter turn increments (right hand rotation). FIGURE 73.

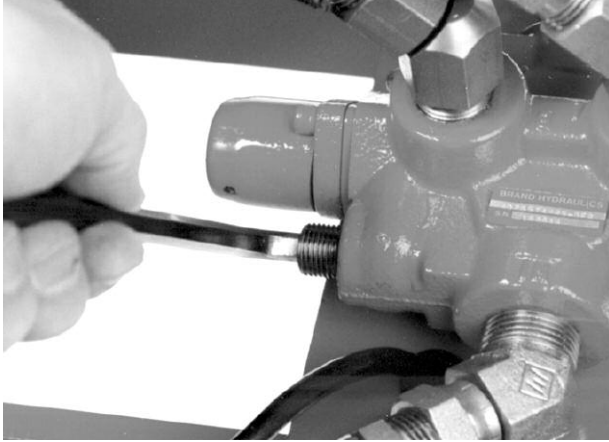


FIGURE 73

18) Adjust the relief valve as required with the Allen type wrench until the pressure gauge depicts 2000 PSI (140 kg/cm²) cracking pressure when the directional valve control lever is SLOWLY pulled to its maximum set position.

IMPORTANT: To prevent damage to the hydraulic pump in the event the quick couplers are not properly connected, it is equipped with an internal pressure relief valve. This valve is set by the pump manufacturer to open at approximately 2500 PSI (170 kg/cm²) cracking pressure and is not externally adjustable. Under normal operating conditions, this pressure relief valve will not require adjustment during the service life of the hydraulic pump. In the event it is felt the relief valve requires adjustment, contact the Customer Service Department for assistance. There is no charge for this service.

19) Reinstall the relief valve cover.

20) Reconnect the hydraulic hoses to the directional control valve.

21) Disconnect the flow control device and properly reconnect the quick couplers.

22) Reconnect the remote engine ignition ON/OFF switch harness.

AXLE AND TOWBAR REALIGNMENT PROCEDURE

Tools Required:

- 1 each, tape measure
- 2 each, 9/16 inch wrenches
- 1 each, plastic hammer

The alignment of the axle and tow bar to the center axis of the DIG-R-MOBILE can be affected by normal wear due to towing and hole digging activities or by a jack knifing incident occurring while backing. In each case, improper alignment can directly affect towing stability and tire service life.

On a frequent schedule, or at anytime visible damage is noted to the tow bar or operator handle area, the alignment between the axle and tow bar should be checked and corrected as necessary. A tow bar with physical damage must be properly discarded and not utilized in further service. Damaged or worn components must be replaced with factory approved replacement parts only.

To check axle to tow bar alignment, proceed as follows:

- 1) Position the DIG-R-MOBILE on a suitable, level surface. The tires of the power unit and engine cradle should be in contact with the ground.
- 2) Remove the tow bar (if so equipped) from the DIG-R-MOBILE according to the procedure outlined in this manual. Properly store the tow bar. Use proper blocking, if and where required, to prevent unexpected tire movement.
- 3) Using the tape measure, determine the distance from the closest point formed where the round section of the axle begins to be machined (FIGURE 74) and the center of the grease Zerk fitting located near the side tilt lever FIGURE 75. Measure both sides. Both measurement values must be within 1/16 inch (1.6 mm).

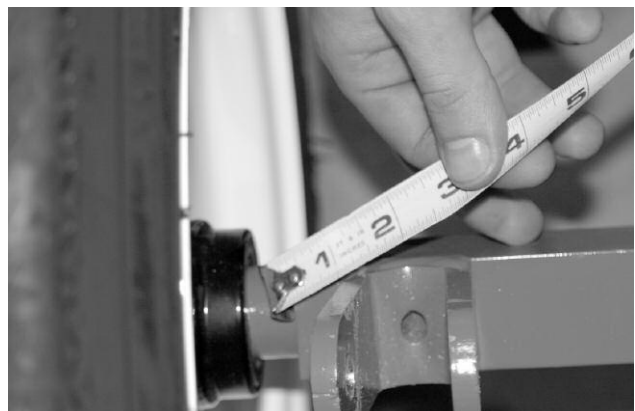


FIGURE 74

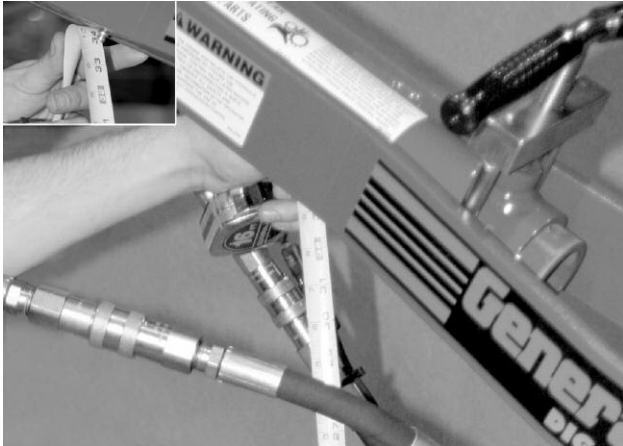


FIGURE 75

4) If adjustment is required, utilize the 9/16-inch wrenches to loosen the axle retaining cap screws until the axle can be repositioned with the hammer. Measure and/or reposition until measurements within the established tolerance are achieved.

5) Tighten the retaining cap screws. Measure to determine the axle alignment is still within the established limits.

6) Reinstall the tow bar according to the procedure outlined in this manual. The tow bar should be centered in the receiver assembly located under the operator handle.

FIGURE 76.

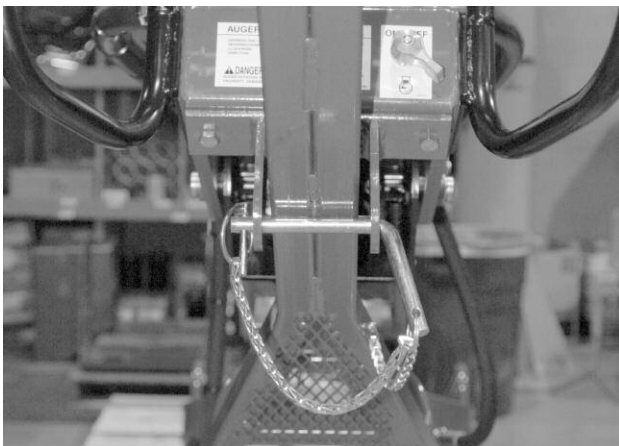


FIGURE 76

7) If the tow bar is not centered, determine if the tow bar is damaged or the attachment fittings are excessively worn and require replacement. If you feel the tow bar is damaged and/or requires replacement for any reason, contact the Customer Service Department for assistance. There is no charge for this service.

AUGER MAINTENANCE PROGRAM

Applications: All models

All General 600 Series DIG-R-MOBILES utilize earth augers incorporating the Pengo® type boring head configuration. This design has been field proven for several decades to provide unequalled digging performance in a wide range of unconsolidated and semi consolidated soil formations. As with any ground-engaging tool, the service life of the wear components will have limits directly affected by soil classification, soil moisture content and general operating procedures. A consistent auger maintenance program will provide maximum digging performance and investment return.

REPLACING A WORN AUGER SCREW BIT

Applications: All augers

Tools Required:
2 each, 1/2 inch wrenches

Parts Required:
1 each, PN SB25 Screw Bit (for use with all augers with the exception of the 3 and 4 inch nominal diameter augers).
1 each, PN SB35 Screw Bit (for use with the 3 inch nominal diameter earth auger ONLY).
1 each, PN SB45 Screw Bit (for use with 4 inch nominal diameter earth auger ONLY).

NOTE: Tungsten Carbide hard-faced versions (SB25C, SB35C and SB45C) of each applicable screw bit are available. A screw bit hard-faced with Tungsten Carbide will not increase the overall productivity rates over a specific auger equipped with the standard screw bit. The Tungsten Carbide hard facing will substantially increase the anticipated service life of a screw bit.

1) The replacement of the auger screw bit will require a level-working platform of sufficient size and appropriate height.

2) Inspect the auger for worn or broken components. Check to determine that the auger does not have a bent or damaged axle. A bent or damaged axle will cause the auger to "wobble" during use. Maximum allowable auger wobble is 0.25-inch (7 mm) total indicated run out (TIR). An auger with a total indicator run out wobble in excess of this value should be removed from service and scrapped.



CAUTION

DO NOT OPERATE AN AUGER, WHICH HAS A BENT OR DAMAGED AXLE WITH A TOTAL INDICATOR RUNOUT EXCEEDING THE MAXIMUM ALLOWABLE LIMIT. EXCESSIVE AUGER WOBBLE CAN REDUCE OPERATOR CONTROL, RESULTING IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

3) Using the wrenches, remove the cap screw which retains the screw bit to the drive lug. Remove the worn screw bit and properly dispose. Inspect the drive lug for signs of excessive wear and damage.

4) Install the replacement screw bit and retaining hardware to the drive lug. Hardware is unidirectional. Secure tight with the wrenches.

REPLACING WORN AUGER TEETH

Applications: All augers 6 inch diameter and larger

Tools Required:

1 each, 1/4-inch drift punch
1 each, suitable safety glasses
1 each, plastic hammer or,
1 each, soft type hammer specifically designed for impact use

Parts Required:

Required Quantity, 35 Standard Dirt Tooth or,
Required Quantity, 35HFC Hard faced Dirt Tooth or,
Required Quantity, 5T30 Chisel Tooth or,
Required Quantity, 5T30HFC Hard faced Chisel Tooth, or
Required Quantity, 1336 Tungsten Carbide Tooth.

The wide variety of available teeth designs are forged from alloy steel and heat treated to increase productivity and extend their service life. All teeth incorporate the same retaining system and are fully interchangeable as far as their configuration and usage allow. Available teeth include the following:

35 Standard Dirt Tooth. For ordinary digging conditions. Thin cross section for fast penetration. Wears sharp. Install in all sockets of all boring heads. Service Life Factor: 1.

35HFC Tooth. Same as the 35 Standard Dirt Tooth with the exception of hard face material deposited on one side. Install with the hard face material facing up. Service Life Factor: 2 to 4.

5T30 Chisel Tooth. Helps rip through caliche, hardpan and other semi consolidated soil formations. Install only in the inside sockets of boring heads with the rib facing up towards the drive hub. Not for use alone with 6 inch diameter augers. Its use increases the service life of other tooth configurations. Service Life Factor: 1.5.

5T30HFC. Same as the 5T30 Chisel Tooth with the exception of hard face material deposited on one side. Install with the hard face material facing up. Service Life Factor: 2 to 5.

1336 Tungsten Carbide Tooth. For use in extremely abrasive soil formations and frozen soils. Not for use in soil formations containing a high percentage of rock larger than the size of a golf ball. Its use in soil formations containing a large percentage of rock can result in chipping damage to the Tungsten Carbide inserts. Delivers extended service life over standard and hard faced tooth configurations in most soil formations. Its use will not normally increase productivity rates over standard and hard faced tooth configurations. Service Life Factor: 2 to 10.

1) The replacement of the auger teeth will require a level-working platform of sufficient size and appropriate height. Wear safety eyewear and any other safety apparel deemed appropriate for the job application and/or job site environment.



DANGER

WEAR SAFETY EYEWEAR AND ANY OTHER SAFETY APPAREL DEEMED APPROPRIATE FOR THE JOB APPLICATION AND/OR JOB SITE ENVIRONMENT. THE TOOTH REPLACEMENT PROCESS CAN CREATE FLYING STEEL CHIPS AND/OR OTHER DEBRIS. CAUTION ALL ONLOOKERS REGARDING THE POSSIBILITY OF AND/OR TO REMAIN CLEAR OF FLYING DEBRIS. IMPROPER SAFETY PROCEDURES CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.

2) Using the hammer and drift punch, strike the visible end of the tooth where mounted to the auger head casting with a smooth movement. Repeat the action until the worn tooth becomes loose within mountign area of the casting. FIGURE 77.

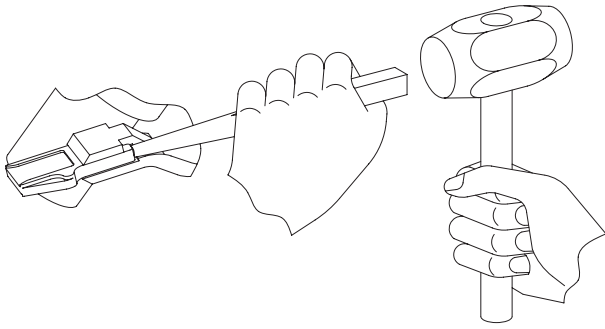


FIGURE 77

3) Remove the worn rubber lock from the mounting area and properly dispose. Both solid, round and flat locking device configurations are utilized.

4) Inspect the mounting area of the casting for excessive wear and/or damage. A mounting area with excessive wear will not properly support a replacement tooth. Excessive wear is usually the indication that the auger has been worn past its useful service life and should be removed from service. An auger with excessive wear is depicted in FIGURE 78.
FIGURE 78



5) Lubricate the replacement rubber lock with water. Oil is not an acceptable lubricant. Install the solid, round type rubber lock into the hole in the core print area. The flat type-locking device installs around the core print area. FIGURE 79.

6) Install the replacement tooth into the core print area by striking the cutting edge of the tooth with the soft type hammer. Use a smooth movement.

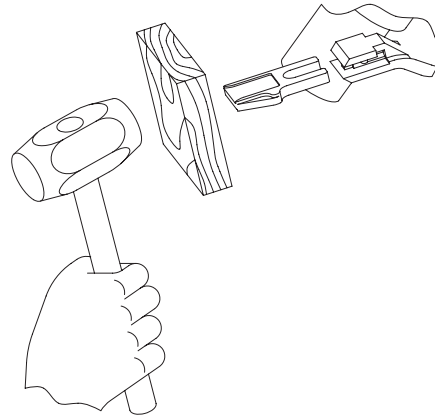


FIGURE 79



CAUTION

DO NOT STRIKE ANY REPLACEMENT TOOTH DIRECTLY WITH A STEEL HAMMER. SUCH AN OCCURRENCE CAN CREATE FLYING STEEL CHIPS AND OTHER DEBRIS, RESULTING IN PROPERTY DAMAGE AND/OR PERSONAL INJURY. CAUTION ALL ONLOOKERS TO REMAIN CLEAR OF THE AREA WHEN PERFORMING AUGER MAINTENANCE.

7) Determine the replacement tooth is properly seated within the core print of the casting. Excessive casting wear will not properly seat a tooth, allowing it to fall loose and become lost.

ENGINE SERVICE

Applications: All models

Consult the applicable material supplied by the engine manufacturer for specific service and maintenance information regarding:

- 1) Muffler
- 2) Spark plug
- 3) Air filter
- 4) Carburetor adjustment
- 5) Ignition timing
- 6) Short and long term storage

Keep this information stored with the Operator Manual for the DIG-R-MOBILE so it will always be available for use when the engine requires service or maintenance. A properly maintained engine will add considerably to the service life and overall productivity of the DIG-R-MOBILE. If you require operation material for a specific engine utilized on a DIG-R-MOBILE, contact the Customer Service Department. There is no charge for this service.

Under Title 13 of the California Code of Regulations, the California Air Resource Board (CARB) has identified several important engine service related subjects. The material supplied by the specific engine manufacturer will include the following information:

- a) Statement of Compliance
- b) Engine oil recommendations
- c) Engine fuel recommendations
- d) Maintenance information
- e) Other information as required by the California Air Resource Board
- f) Emission component warranty statement

If you have any questions regarding emission components, warranty rights and responsibilities for a specific engine utilized on a DIG-R-MOBILE, contact the Customer Service Department for specific information. There is no charge for this service.

TROUBLESHOOTING

Applications: All models

ENGINE

ENGINE FAILS TO START

Engine ignition ON/OFF switch (if equipped) in OFF position. Place in ON position.

Remote engine ignition ON/OFF switch in OFF position. Place in ON position.

Engine mounted ignition cut-off switch (if equipped) improperly adjusted. Adjust switch.

Incorrect carburetor adjustment. See **Service** section.

Ignition wire to spark plug loose or disconnected. Reconnect.

Fuel supply exhausted. Refill fuel tank.

Improper oil level in engine crankcase. Fill crankcase to proper oil level.

ENGINE LOSES POWER

Incorrect carburetor adjustment. See **Service** section.

Water in fuel supply. Drain and replace fuel.

Plugged engine exhaust ports. See **Service** section.

Dirty spark plug. See **Service** section.

Incorrect oil level in engine crankcase. Fill crankcase to proper level.

Fuel tank breather vent closed (if so equipped). Open vent.

Dirty air filter. See **Service** section.

ENGINE OVERHEATS

Incorrect carburetor adjustment. See **Service** section.

Cooling fins clogged with debris. Remove engine blower housing and clean cooling fins.

OPERATIONAL PROBLEMS

AUGER FAILS TO ROTATE WHEN DIRECTIONAL VALVE CONTROL LEVER IS DEPRESSED

Hydraulic system quick type couplers are improperly coupled. Stop engine and cycle directional control valve lever. Properly connect the quick couplers. See **Assembly** section.

Hydraulic pump driveshaft key sheared. Repair and replace as necessary.

Hydraulic motor driveshaft roll pins sheared in auger coupler. Remove and replace roll pins.

Insufficient reservoir oil level. See **Service** section.

DIG-R-MOBILE LACKS DIGGING POWER

Insufficient reservoir oil level. See **Service** section.

Auger diameter too large for given soil condition. See **Digging Operation** section.

Incorrect engine speed. See **Assembly** section.

Plugged suction line strainer. Clean strainer. See **Service** section.

Plugged return line filter element. Replace element. See **Service** section.

Improper hydraulic system pressure relief valve setting. Adjust pressure relief valve located in direction control valve to proper setting. See **Service** section.

Worn hydraulic pump. Have pump tested at an authorized repair facility and replace as necessary. See **Service** section.

Worn hydraulic motor. Have motor tested at an authorized repair facility and replace as necessary. See **Service** section.

Hydraulic hose damage and/or restriction. Inspect each hose and replace as necessary. See **Service** section.

Direction control valve center rod not moving to the maximum opened position. Determine directional valve control lever allows center rod to move to the maximum open position. Adjust linkage as required.

AUGER ROTATES WHEN DIRECTIONAL VALVE CONTROL LEVER IS RELEASED

Incorrect directional control valve center rod movement. Inspect valve center rod for wear and improper spring adjustment. Replace spool and/or spring if necessary. See **Service** section.

Directional control valve handle/linkage component damaged. Inspect and replace as necessary.

Directional control valve handle bearing worn. Inspect bearing. Replace and/or lubricate the bearing as necessary.

TOOLS OPERATING FROM THE AUXILIARY TOOL CIRCUIT FAIL TO FUNCTION PROPERLY

Hydraulic system quick type couplers are improperly coupled. Stop engine and cycle directional control valve lever. Properly connect the quick couplers. See **Assembly** section. Hydraulic pump driveshaft key sheared. Repair and replace as necessary.

Insufficient reservoir oil level. See **Service** section.

Incorrect engine speed producing improper flow rate. See **Service** section.

Plugged suction line strainer. Clean strainer. See **Service** section.

Plugged return line filter element. Replace element. See **Service** section.

Improper hydraulic system pressure relief valve setting. Adjust pressure relief valve located in direction control valve to proper setting. See **Service** section.

Worn hydraulic pump. Have pump tested at an authorized repair facility and replace as necessary. See **Service** section.

Worn tool. Inspect and test tool according to procedures established by the tool manufacturer. Consult the tool manufacturer for specific information.

Hydraulic hose damage and/or restriction. Inspect each hose and replace as necessary. See **Service** section.

Operation of a tool designed for use with a closed center type hydraulic system. Replace with the appropriate components designed for operation with an open center hydraulic system. Consult the tool manufacturer for specific information.

GENERAL

TOWING RELATED PROBLEMS

Uneven tire wear. DIG-R-MOBILE tracking improperly behind tow vehicle. Determine tow bar is not damaged. Realign axle relative to tow bar. Contact Customer Service Department for information. See **Service** section.

DIG-R-MOBILE pulls to one side during towing. Improper tracking behind tow vehicle. Determine tow bar is not damaged. Realign axle relative to tow bar. Contact Customer Service Department for information. See **Service** section.

STORAGE

Applications: All models

Proper procedure for long-term storage of the DIG-R-MOBILE will protect it against the affects of corrosion and damage. If the DIG-R-MOBILE is not to be operated for a period of 30 days or more, proceed to store as follows:

1) Clean all accumulated dirt and grease from the DIG-R-MOBILE utilizing an appropriate solvent.

CAUTION

Observe all applicable safety precautions for the solvent.

2) Follow the procedure as outlined in the material supplied by the engine manufacturer detailing long term storage of the engine.

3) Drain the reservoir and refill with clean oil that is suitable for use when the DIG-R-MOBILE will be next utilized.

4) Check all visible parts for wear, breakage or damage. Order any part required to make the necessary repair. This will avoid a needless delay when operating the DIG-R-MOBILE at next use.

5) Apply a light coat of protective grease to the auger coupler to prevent the formation of rust.

6) Do not store the DIG-R-MOBILE connected to an auger. Always store the DIG-R-MOBILE with the tires of the power unit and engine cradle in contact with the ground. Storing the DIG-R-MOBILE in this configuration provides static stability and minimizes the potential of engine oil draining from the breather vent and damaging the surrounding environment. This configuration will minimize the potential for engine crankcase oil entering the combustion chamber and creating a hydraulic lock up.

7) Close the fuel tank breather vent (if so equipped) to its maximum set position.

8) Turn the fuel ON/OFF valve to the OFF position.

9) Turn the engine ON/OFF ignition switch (if so equipped) to the OFF position.

10) Turn the remote engine ignition ON/OFF switch to the OFF position.

11) Store the DIG-R-MOBILE inside. If the DIG-R-MOBILE must be stored outside, completely protect it and each auger with a suitable covering.

SPECIFICATIONS

Applications: 660H DIG-R-MOBILE powered by the Honda GXV390 4 Cycle gasoline engine

ENGINE

TYPE

Honda GXV390, 13 HP (97 kW) @3600 RPM

HIGH SPEED

3450 RPM nominal (no load)

IDLE SPEED SPARK PLUG GAP

1800 RPM .030 inches (0.8 mm)

FUEL

Unleaded (Regular grade is an acceptable substitute). Consult the material supplied by the engine manufacturer for specific information.

FUEL TANK CAPACITY

1.6 US quarts (1.5 lit)

HYDRAULIC SYSTEM

TYPE

Open center, fixed displacement hydraulic pump and motor.

FLOW RATE

8 GPM (30 lit/min)

HYDRAULIC RESERVOIR CAPACITY

5 US gallons (19 lit)

SYSTEM PRESSURE RELIEF VALVE SETTING

2000 PSI (140 kg/cm²)

OIL SPECIFICATION

High quality 10W40 motor oil classified for service SF, CD, containing a minimum of .125% zinc anti-wear additive. Refer to **HYDRAULIC SYSTEM OIL RECOMMENDATIONS** for specific information.

OIL TEMPERATURE OPERATING RANGE

-20°F to 200°F (-28°C to 93°C)

GENERAL

REQUIRED NUMBER OF OPERATORS 1

AUGER CAPACITY

2-inch (51 mm) diameter up to and including 18-inch (457 mm) diameter. Refer to **Digging Operation** for specific information.

LEAD AUGER SERIES

General 4400 Series for use with the 1-3/8 inch (35 mm) hexagon auger drive connection, General PSD Series for use with the 7/8 inch (22 mm) square auger drive connection and General BT360 Series for use with the Stihl type auger drive connection.

AUGER EXTENSION SERIES

General 5500 Series for use with the 1-3/8 inch (35 mm) hexagon auger drive connection, General PSD Series for use with the 7/8 inch (22 mm) square auger drive connection and General BT360 Series for use with the Stihl type auger drive connection.

MAXIMUM DRILLING TORQUE

276 ft lbs (374 N.m) at 2000 PSI (140 kg/cm²).

AUGER ROTATION

144 RPM (no SPEED load)

TIRES

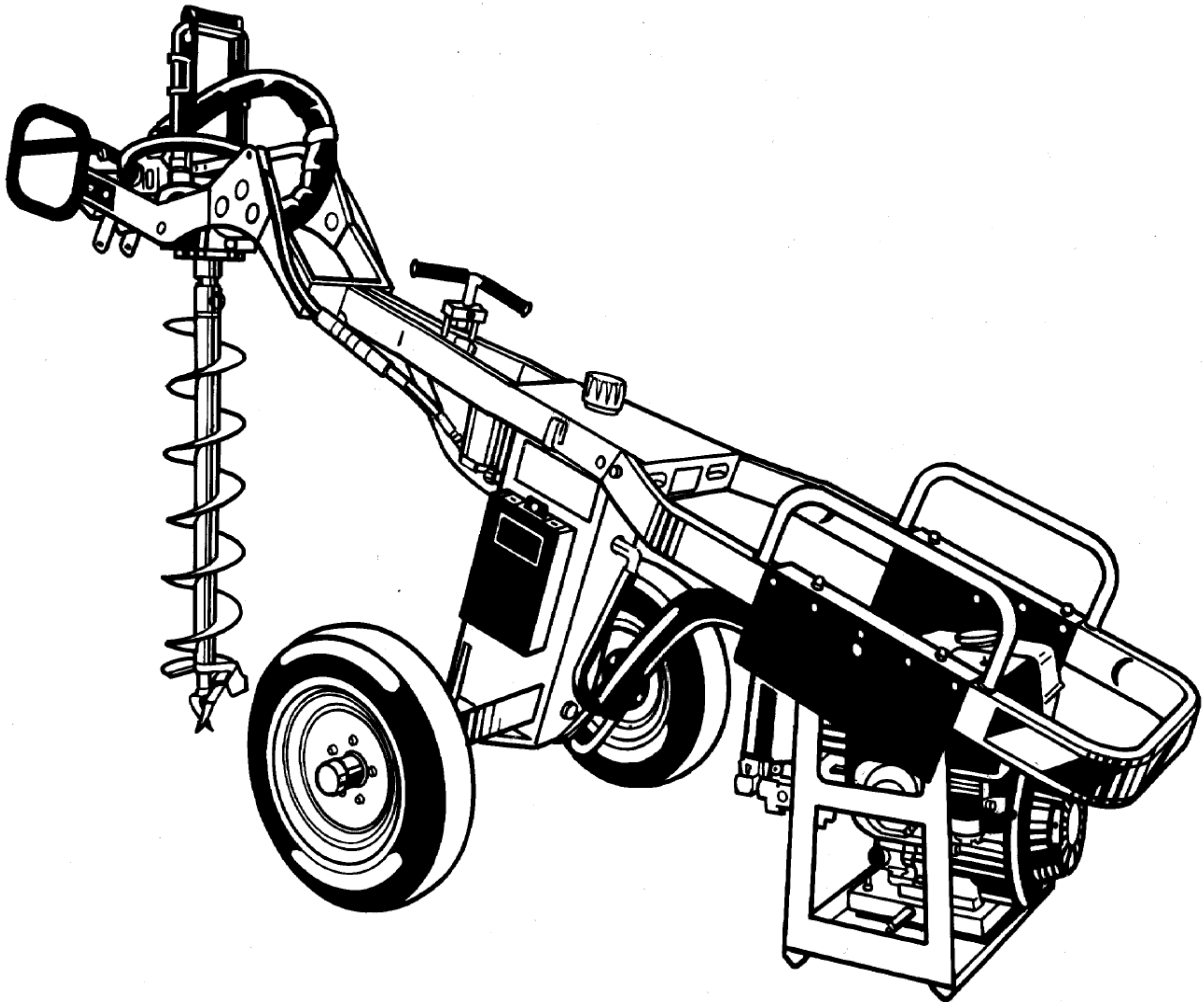
4.80-12, load range B minimum, highway use rated. For normal towing configurations maintain air pressure at 25 PSI (1.75 kg/cm²). Variances in road conditions and driving habits may require deviations from this value.

TOW CONFIGURATION

Separate, quick attach tow bar with adjustable 1-7/8 inch (48 mm) to 2-inch (51 mm) ball hitch coupler.

NOMINAL WEIGHT 440 lbs (200 kg)

Replacement Parts DIG-R-MOBILE (660)

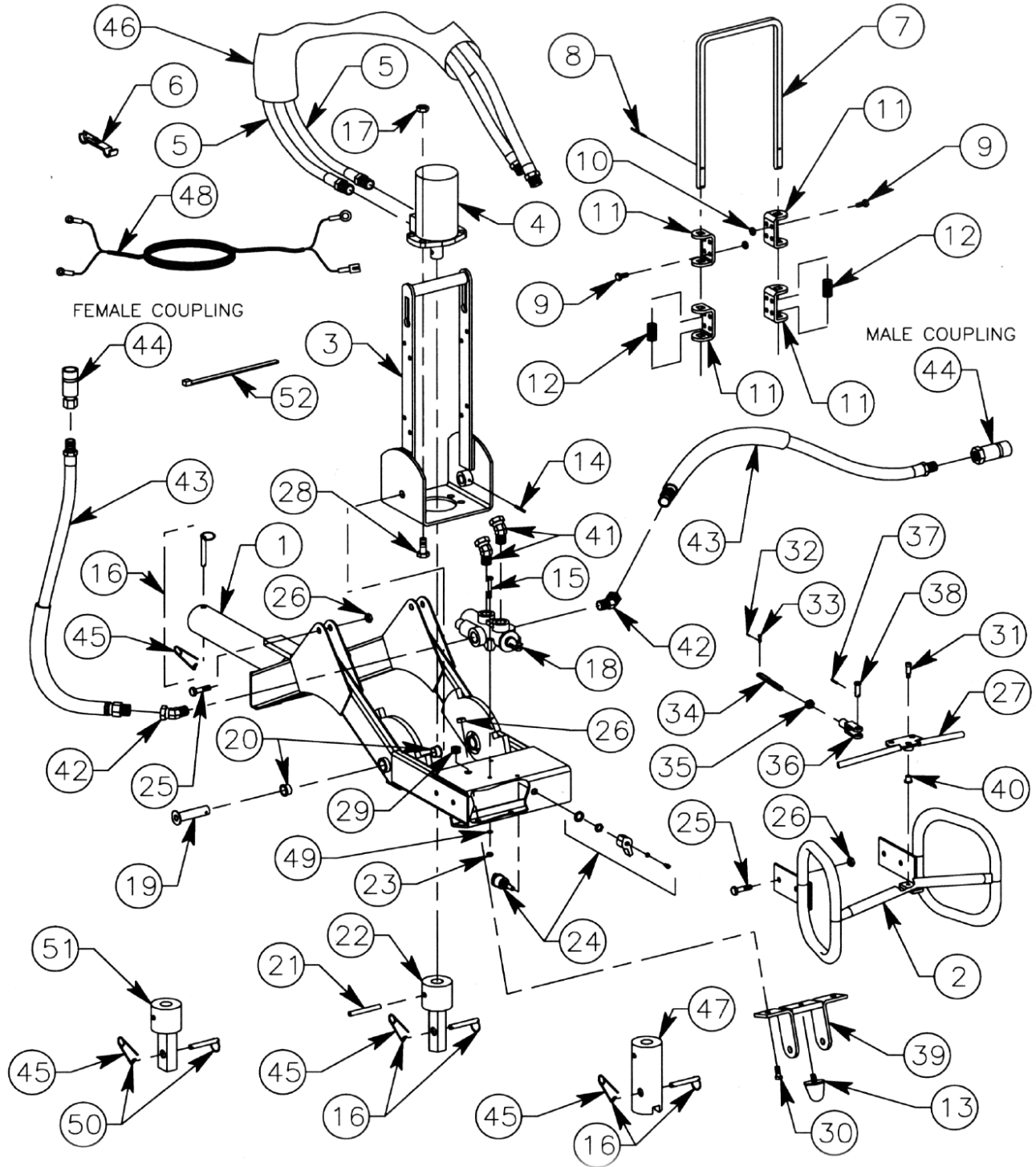


Know what's below.
Call before you dig.

General
EQUIPMENT COMPANY

Control Handle Assembly 660H And 660V DIG-R-MOBILE®

(Serial Numbers 25550 Thru 25831)



Control Handle Assembly 660H And 660V DIG-R-MOBILE® (Serial Numbers 25550 Thru 25831)

REFERENCE NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	660-0030	Pivot Frame Weldment	1
2	66-0110	Handle Weldment	1
3	660-0100	Mount, Hydraulic Motor	1
4	660-0360	Motor, Hydraulic	1
5	660-0600	Hose Assemble (Valve To Motor)	2
6	22-18 T-Tap	T-Tap, 22-18 Gauge Wire	1
7	660-0230	Handle, Ratchet	1
8	83021100	Pin, Roll, 1/8" x 1-3/8", Stainless Steel	2
9	15050800	Screw, Cap 5/16"-18 UNC x 1", Plated	8
10	53050000	Nut, Hexagon, Nylock®, 5/16-18 UNC, Plated	8
11	660-0280	Bracket, Latch	4
12	660-0370	Spring, Ratchet	2
13	GP21-0040	Bumper, Rubber	1
14	20030900	Pin, Roll, 3/16" x 1-1/8"	2
15	60041200	Screw, Skt Hd, 1/4-20 UNC x 1-1/2", Grade 5, Plated	3
16	2121	Pin, Auger, General (includes P/N AP-21-S)	2
17	52080010	Nut, Hexagon, Top Lock, 1/2-13" UNC, Grade 8, Plated	4
18	660-0400	Valve, Hydraulic	1
19	660-0460	Pin, Pivot	2
20	660-0410	Bearing, Oilite®	4
21	660-0380	Pin, Triple Roll, 3/8" x 2-1/2"	1
22	660-5CLR	Coupler, Auger, 1-3/8" Hexagon, 6 sided	1
23	52060001	Nut, Hexagon, Lock, 2-Way, 3/8-24 UNF, Plated	1
24	CS8-0350	Switch, Shut-Off	1
25	15061000	Screw, Cap, 3/8-16 UNC x 1-1/4", Grade 5, Plated	4
26	53060000	Nut, Hexagon, Nylock®, 3/8-16 UNC, Plated	6
27	660-0140	Lever, Valve Control	1
28	15081210	Screw, Cap, 1/2-13 UNC x 1-1/2", Grade 8, Plated	4
29	660-0890	Grommet, Wire	1
30	15060800	Screw, Cap, 3/8-16 UNC x 1", Grade 5, Plated	2
31	62060400	Bolt, Shoulder, 3/8" x 1/2"	1
32	22010400	Pin, Cotter, 1/16" x 1/2"	1
33	23030700	Pin, Clevis, 3/16" x 7/8"	1
34	660-0290	Link, Valve	1
35	18060001	Nut, Hexagon 3/8-24 UNF, Plated	1
36	660-0450	Yoke, Clevis, 3/8"	1
37	22020600	Pin, Cotter, 1/8" x 3/4"	1
38	23060800	Pin, Clevis, 3/8" x 1"	1
39	660-0150	Clamp, Bumper	1
40	660-0440	Bearing, Oilite®	1
41	660-0830	Adapter, 45°	2
42	660-0820	Adapter, 45°	2
43	660-0640	Hose Assembly (Valve To Coupling)	2
44	660-0670	Quick, Coupling (Includes Male And Female Couplers)	2
45	AP-21-S	Pin, Safety	1
46	660-0680	Sleeve, Hose Protective	45"
47	660-7CLR	Coupler, Auger, Stihl Type Drive	1
48	660-0430	Wire Loom, Shut-Off	1
49	660-0010-040	Clamp, Hose	2
50	2021	Pin, Auger, Ground Hog (Includes P/N AP-21-S)	1
51	660-6CLR	Coupler, Auger, 7/8" Square, Ground Hog Type Drive Tie, Nylon, 6" Long	1
52	660-0560		24

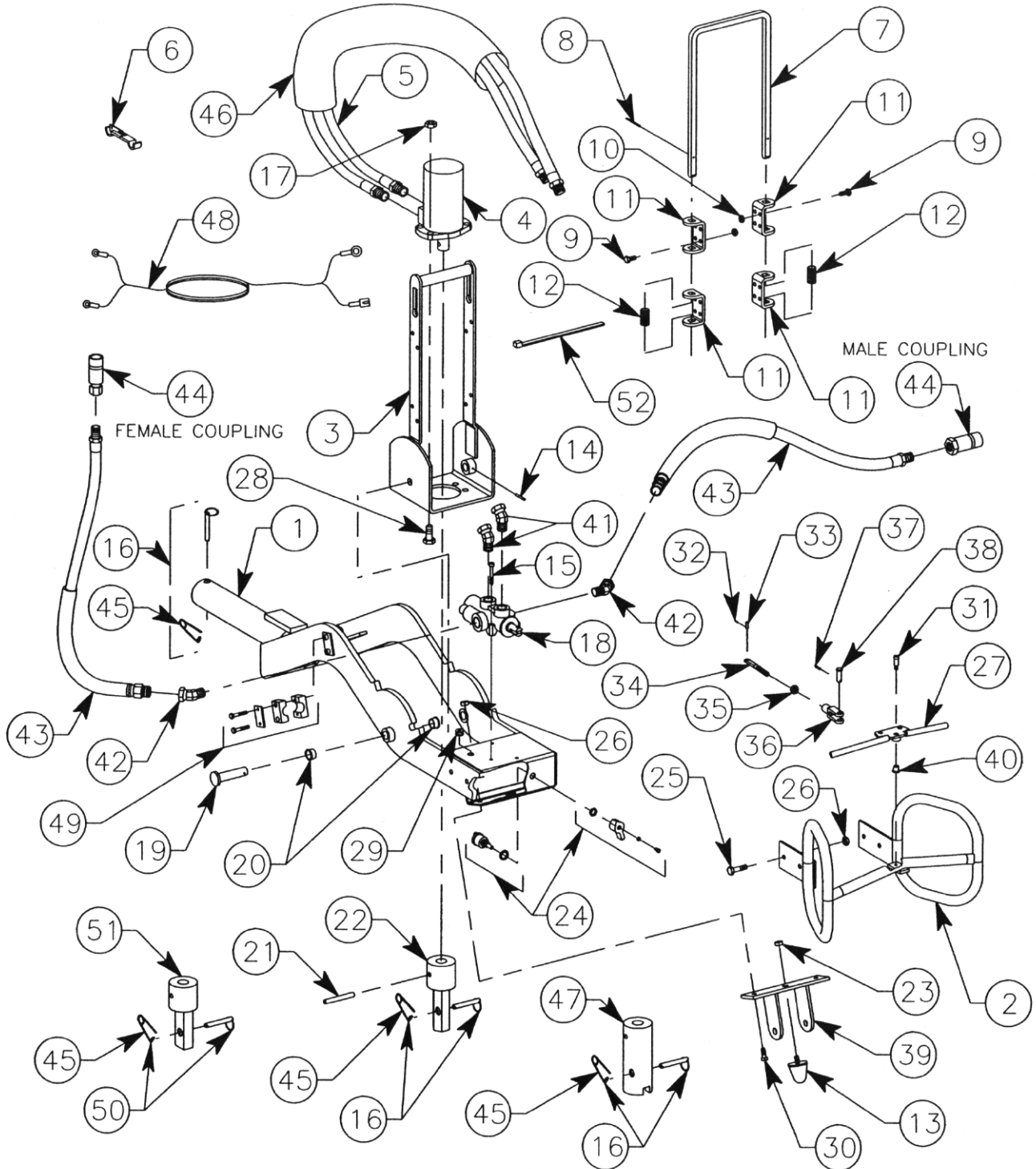


Know what's below.
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Control Handle Assembly 660H And 660V DIG-R-MOBILE®

(Serial Numbers 25832 Thru 26385)



Control Handle Assembly 660H And 660V DIG-R-MOBILE® (Serial Numbers 25832 Thru 26385)

REFERENCE NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	660-0030	Pivot Frame Weldment	1
2	660-0111	Handle Weldment	1
3	660-0100	Mount, Hydraulic Motor	1
4	660-0360	Motor, Hydraulic	1
5	660-0600	Hose Assembly (Valve To Motor)	2
6	22-18 T-TAP	T-Tap, 22-18 Gauge Wire	1
7	660-0230	Handle, Ratchet	1
8	8302110	Pin, Roll, 1/8" x 1-3/8", Stainless Steel	2
9	15050800	Screw, CAP 5/16-18 UNC x 1", Plated	8
10	53050000	Nut, Hexagon, Nylock®, 5/16-18 UNC, Plated	8
11	660-0280	Bracket, Latch	4
12	660-0370	Spring, Ratchet	2
13	GP21-0040	Bumper, Rubber	1
14	20030900	Pin, Roll, 3/16" x 1-1/8"	2
15	60041200	Screw, Skt Hd, 1/4-20 UNC x 1-1/2", Grade 5, Plated	3
16	2121	Pin, Auger, General (Includes P/N AP-21-S)	2
17	52080010	Nut, Hexagon, Top Lock, 1/2-13" UNC, Grade 8, Plated	4
18	660-0400	Valve, Hydraulic	1
19	660-0570	Pin, Pivot	2
20	660-0410	Bearing, Oilite®	4
21	660-0380	Pin, Triple Roll, 3/8" x 2-1/2"	1
22	660-5CLR	Coupler, Auger, 1-3/8" Hexagon, 6 sided	1
23	52060001	Nut, Hexagon, Lock, 2-Way, 3/8-24 UNF, Plated	1
24	CS8-0350	Switch, Shut-Off	1
25	15061000	Screw, Cap, 3/8-16 UNC x 1-1/4", Grade 5 Plated	4
26	53060000	Nut, Hexagon, Nylock®, 3/8-16 UNC, Plated	6
27	660-0140	Lever, Valve Control	1
28	15081210	Screw, Cap, 1/2-13 UNC x 1-1/2", Grade 8, Plated	4
29	660-0890	Grommet, Wire	1
30	15060800	Screw, Cap, 3/8-16 UNC x 1", Grade 5, Plated	2
31	62060400	Bolt, Shoulder, 3/8" x 1/2"	1
32	22010400	Pin, Cotter, 1/16" x 1/2"	1
33	23030700	Pin, Clevis, 3/16" x 7/8"	1
34	660-0290	Link, Valve	1
35	18060001	Nut, Hexagon 3/8-24 UNF, Plated	1
36	660-0450	Yoke, Clevis, 3/8"	1
37	22020600	Pin, Cotter, 1/8" x 3/4"	1
38	23060800	Pin, Clevis, 3/8" x 1"	1
39	660-0150	Clamp, Bumper	1
40	660-0440	Bearing, Oilite®	1
41	660-0830	Adapter, 45°	2
42	660-0820	Adapter, 45°	2
43	660-0640	Hose Assembly (Valve To Coupling)	2
44	660-0670	Quick, Coupling (Includes Male And Female Couplers)	2
45	AP-21-S	Pin, Safety	1
46	660-0680	Sleeves, Hose Protective	45"
47	660-7CLR	Coupler, Auger, Stihl Type Drive	1
48	660-0430	Wire Loom, Shut-Off	1
49	660-0010-040	Clamp, Hose	2
50	2021	Pin, Auger, Ground Hog (Includes P/N AP-21-S)	1
51	660-6CLR	Coupler, Auger, 7/8" Square, Ground Hog Type Drive Tie, Nylon, 6" Long	1
52	660-0560		24



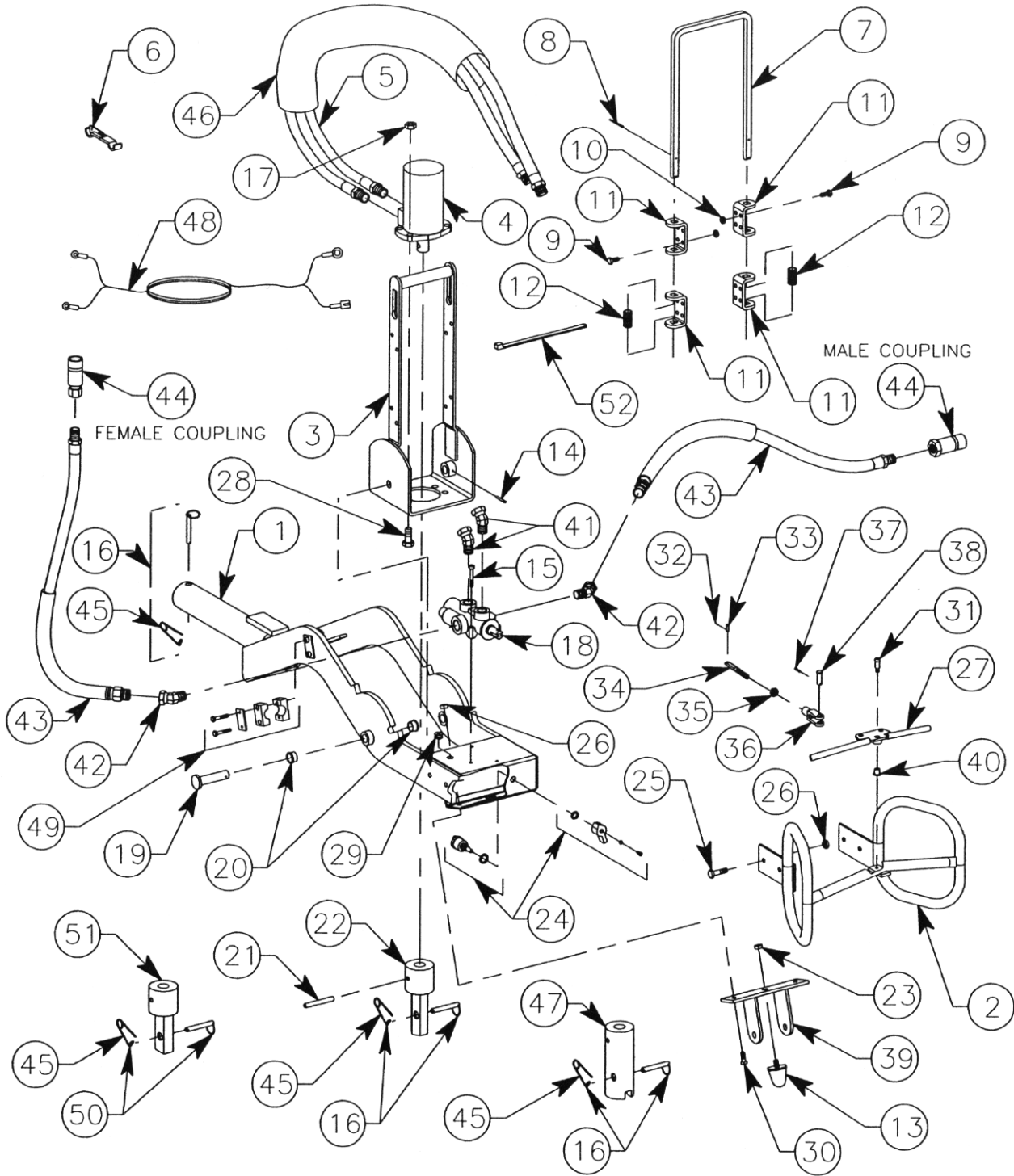
Know what's below.
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Control Handle Assembly

660H And 660V DIG-R-MOBILE®

(Starting With Serial Number 26386)



Control Handle Assembly 660H And 660V DIG-R-MOBILE® (Starting With Serial Number 26386)

REFERENCE NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	660-0030	Pivot Frame Weldment	1
2	660-0111	Handle Weldment	1
3	660-0100	Mount, Hydraulic Motor	1
4	660-0360	Motor, Hydraulic	1
5	660-0601	Hose Assembly (Valve To Motor)	2
6	22-18 T-TAP	T-Tap, 22-18 Gauge Wire	1
7	660-0230	Handle, Ratchet	1
8	83021100	Pin, Roll, 1/8" x 1-3/8", Stainless Steel	2
9	15050800	Screw, CAP 5/16-18 UNC x 1", Plated	8
10	53050000	Nut, Hexagon, Nylock®, 5/16-18 UNC, Plated	8
11	660-0280	Bracket, Latch	4
12	660-0370	Spring, Ratchet	2
13	GP21-0040	Bumper, Rubber	1
14	20030900	Pin, Roll, 3/16" x 1-1/8"	2
15	60041200	Screw, Skt Hd, 1/4-20 UNC x 1-1/2", Grade 5, Plated	3
16	2121	Pin, Auger, General (Includes P/N AP-21-S)	2
17	52080010	Nut, Hexagon, Top Lock, 1/2-13" UNC, Grade 8, Plated	4
18	660-0400	Valve, Hydraulic	1
19	660-0570	Pin, Pivot	2
20	660-0410	Bearing, Oilite®	4
21	660-0380	Pin, Triple Roll, 3/8" x 2-1/2"	1
22	660-5CLR	Coupler, Auger, 1-3/8" Hexagon, 6 sided	1
23	52060001	Nut, Hexagon, Lock, 2-Way, 3/8-24 UNF, Plated	1
24	CS8-0350	Switch, Shut-Off	1
25	15061000	Screw, Cap, 3/8-16 UNC x 1-1/4", Grade 5 Plated	4
26	53060000	Nut, Hexagon, Nylock®, 3/8-16 UNC, Plated	6
27	660-0140	Lever, Valve Control	1
28	15081210	Screw, Cap, 1/2-13 UNC x 1-1/2", Grade 8, Plated	4
29	660-0890	Grommet, Wire	1
30	15060800	Screw, Cap, 3/8-16 UNC x 1", Grade 5, Plated	2
31	62060400	Bolt, Shoulder, 3/8" x 1/2"	1
32	22010400	Pin, Cotter, 1/16" x 1/2"	1
33	23030700	Pin, Clevis, 3/16" x 7/8"	1
34	660-0290	Link, Valve	1
35	18060001	Nut, Hexagon 3/8-24 UNF, Plated	1
36	660-0450	Yoke, Clevis, 3/8"	1
37	22020600	Pin, Cotter, 1/8" x 3/4"	1
38	23060800	Pin, Clevis, 3/8" x 1"	1
39	660-0150	Clamp, Bumper	1
40	660-0440	Bearing, Oilite®	1
41	660-0830	Adapter, 45°	2
42	660-0820	Adapter, 45°	2
43	660-0641	Hose Assembly (Valve To Coupling)	2
44	660-0670	Quick, Coupling (Includes Male And Female Couplers)	2
45	AP-21-S	Pin, Safety	1
46	660-0680	Sleeve, Hose Protective	45"
47	660-7CLR	Coupler, Auger, Stihl Type Drive	1
48	660-0430	Wire Loom, Shut-Off	1
49	660-0010-040	Clamp, Hose	2
50	2021	Pin, Auger, Ground Hog (Includes P/N AP-21-S)	1
51	660-6CLR	Coupler, Auger, 7/8" Square, Ground Hog Type Drive Tie, Nylon, 6" Long	1
52	660-0560		24

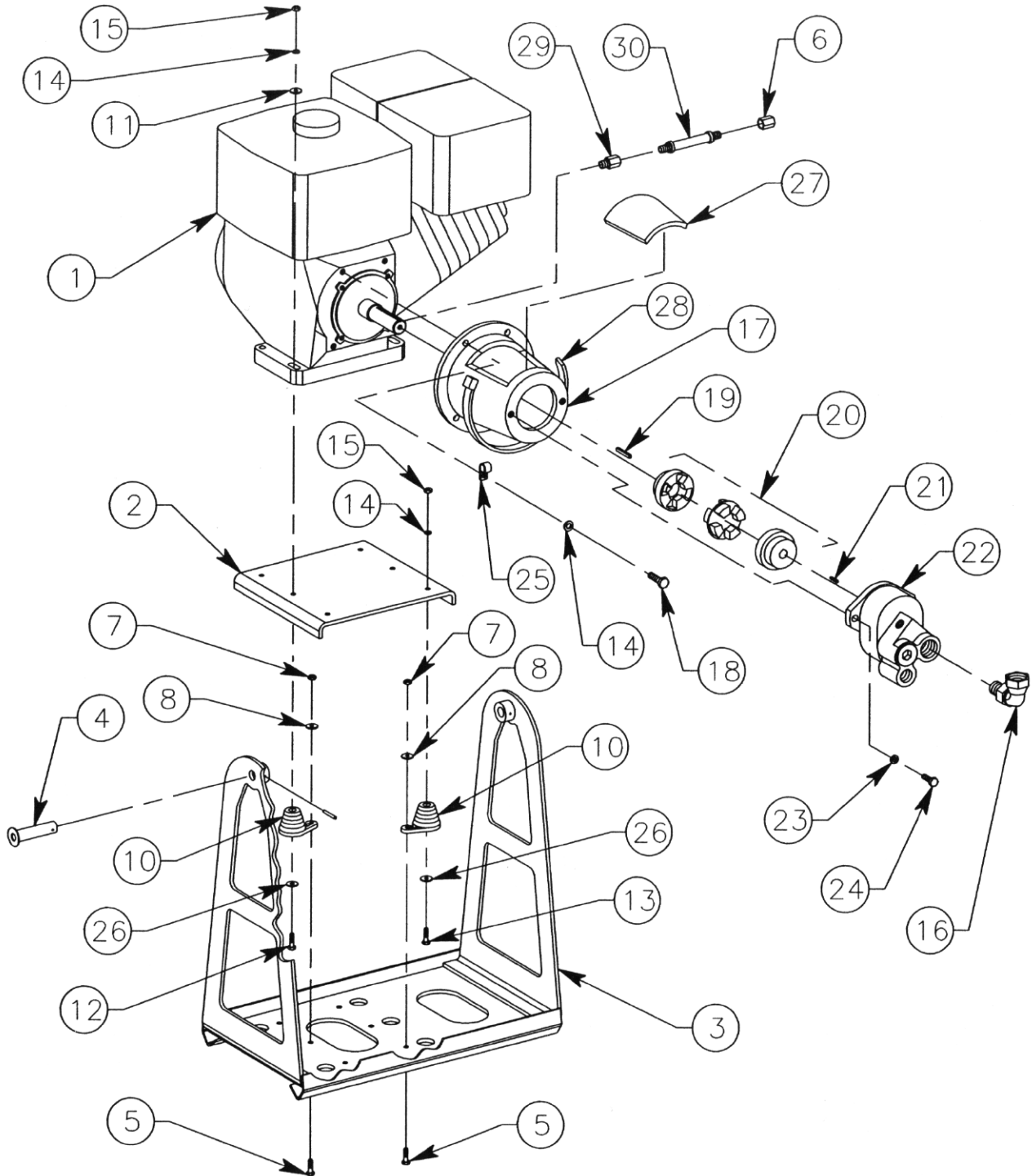


Know what's below.
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Engine Cradle Assembly

660H And 660V DIG-R-MOBILE®

(Serial Numbers 25550 Thru 25780)



Engine Cradle Assembly 660H And 660V DIG-R-MOBILE® (Serial Numbers 25550 Thru 25780)

REFERENCE NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	GX390T1QAA2-BLK	Engine, Honda, (13HP)	1 (660H)
	245432 -0235- E1	Engine, Briggs and Stratton Vanguard (13HP)	1 (660V)
2	660-0270	Plate, Engine Mount	1
3	660-0040	Engine Cradle Weldment	1
4	660-0460	Pin, Pivot	2
5	15050800	Screw, Cap, 5/16-18 UNC x 1", Grade 5, Plated	6
6	660-0490	Cap, Female, 1/4" NPT	1
7	53050000	Nut, Hexagon, Nylock®, 5/16-18 UNC, Plated	6
8	17050000	Washer, Flat, 5/16", Plated	6
9	20030900	Pin, Roll, 3/16" x 1-18"	2
10	660-0550	Spring, Plated	6
11	17060000	Washer, Flat, 3/8", Plated	4
12	15061800	Screw, Cap, 3/8-16 UNC x 2-1/4", Grade 5, Plated	4
13	15061000	Screw, Capt, 3/8-16 UNC x 1-1/4", Grade 5, Plated	2
14	16060000	Washer, Lock, 3/8", Plated	6
15	18060000	Nut, Hexagon, 3/8-16 UNC, Plated	6
16	660-0800	Adapter, 90°, 1", "O" -Ring	1
17	660-0330	Mount, Pump To Engine	1
18	15061000	Screw, Cap, 3/8-16 UNC x 1-1/4", Grade 5, Plated	4
19	63040800	Key, Square, 1/4" x 1/4" x 1"	1
20	660-0340	Coupling, Pump	1
21	61	Key, Woodruff, 5/32" x 5/8" , Alloy	1
22	660-0350	Pump, Hydraulic	1
23	16060000	Washer, Lock, 3/8", Plated	2
24	15061000	Screw, Cap, 3/8-16 UNC x 1-1/4", Grade 5, Plated	2
25	COV-0411	Clamp, Plated	1
26	72060000	Washer, USS Mill Carb, 3/8", Plated	6
27	660-0520	Cover, Coupling	2
28	660-0540	Tie, Nylon, 21" Long	1
29	660-0500	Adapter, Engine Oil Drain (Honda Engine Only)	1
	660-0510	Adapter, Engine Oil Drain (Vanguard Engine Only)	1
30	660-0480	Hose, Engine Oil Drain	1



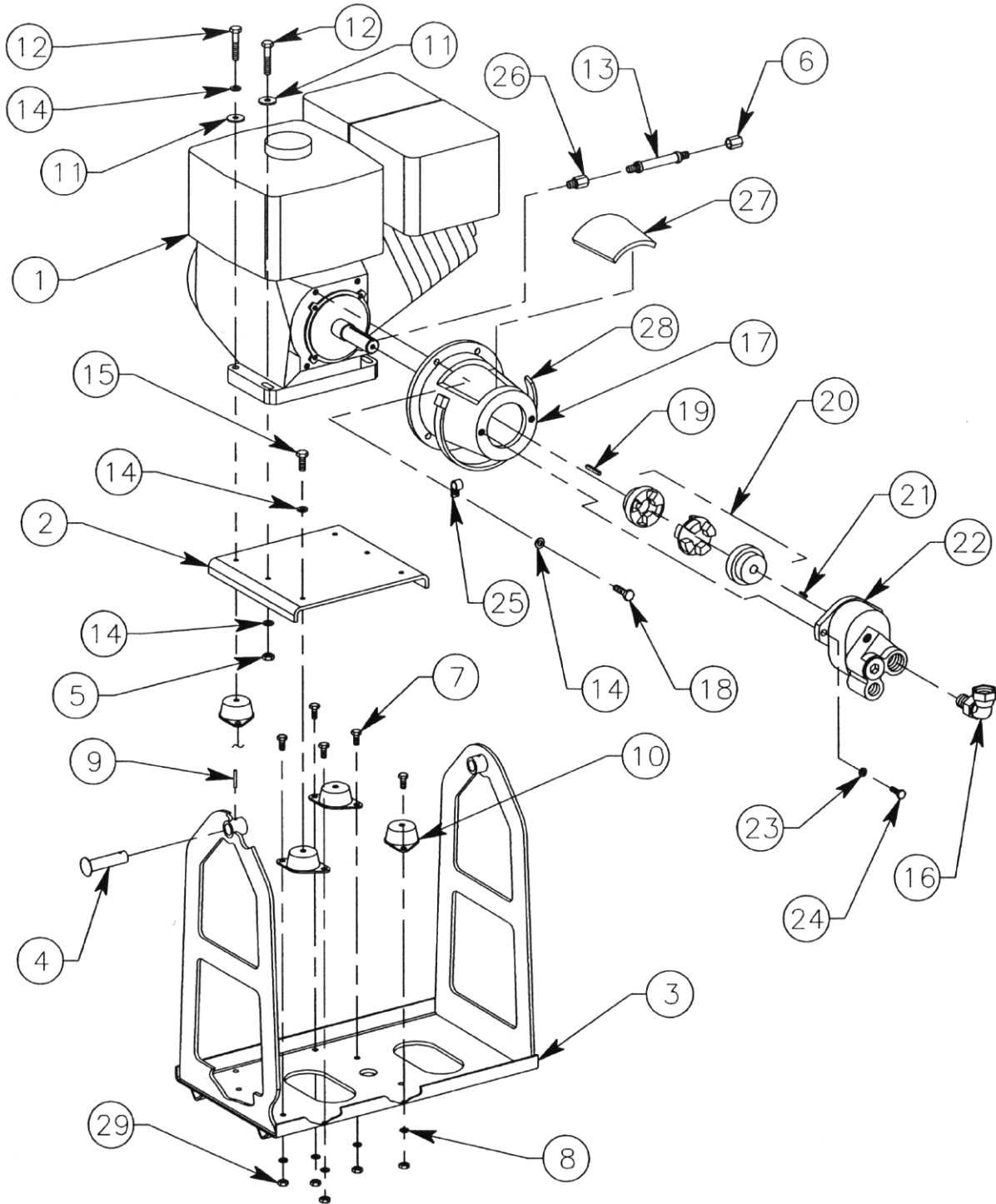
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Engine Cradle Assembly

660H And 660V DIG-R-MOBILE®

(Serial Numbers 25781 Thru 26385)



Engine Cradle Assembly 660H And 660V DIG-R-MOBILE® (Serial Numbers 25781 Thru 26385)

REFERENCE NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	GX390T1QAA2-Bik 245432-0235- E1	Engine, Honda (13HP) Engine, Briggs and Stratton Vanguard (13HP)	1 (660H) 1 (660V)
2	660-0270	Plate, Engine Mount	1
3	660-0041	Engine Cradle Weldment	1
4	660-0460	Pin, Pivot	2
5	18060000	Nut, Hexagon, 3/8-16 UNC, Plated	2
6	660-0490	Cap, Female, 1/4" NPT	1
7	15050700	Screw, Cap, 5/16-18 UNC x 7/8", Grade 5, Plated	8
8	16050000	Washer, Lock, 5/16", Plated	8
9	20030900	Pin, Roll, 3/16" x 1-1/8"	2
10	660-0900	Mount, Rubber	4
11	72060000	Washer, USS Mill Carb, 3/8", Plated	4
12	15061600	Screw, Cap, 3/8-16 UNC x 2", Grade 5, Plated	4
13	660-0480	Hose, Engine Oil Drain	1
14	16060000	Washer, Lock, 3/8", Plated	6
15	15060800	Screw, Cap, 3/8-16 UNC x 1", Grade 5, Plated	2
16	660-0800	Adapter, 90°, 1", "O" -Ring	1
17	660-0330	Mount, Pump To Engine	1
18	15061000	Screw, Cap, 3/8-16 UNC x 1-1/4", Grade 5, Plated	4
19	63040800	Key, Square, 1/4" x 1/4" x 1"	1
20	660-0340	Coupling, Pump	1
21	63030800	Key, Square, 3/16" x 3/16" x 1"	1
22	660-0350	Pump, Hydraulic	1
23	16060000	Washer, Lock, 3/8", Plated	2
24	15061000	Screw, Cap, 3/8-16 UNC x 1-1/4", Grade 5, Plated	2
25	COV-0411	Clamp, Plated	1
26	660-0500	Adapter, Engine Oil Drain (Honda Engine Only)	1
	660-0510	Adapter, Engine Oil Drain (Vanguard Engine Only)	1
27	660-0520	Cover, Coupling	2
28	660-0540	Tie, Nylon, 21" Long	1
29	18050000	Nut, Hexagon, 5/16-18 UNC, Plated	8



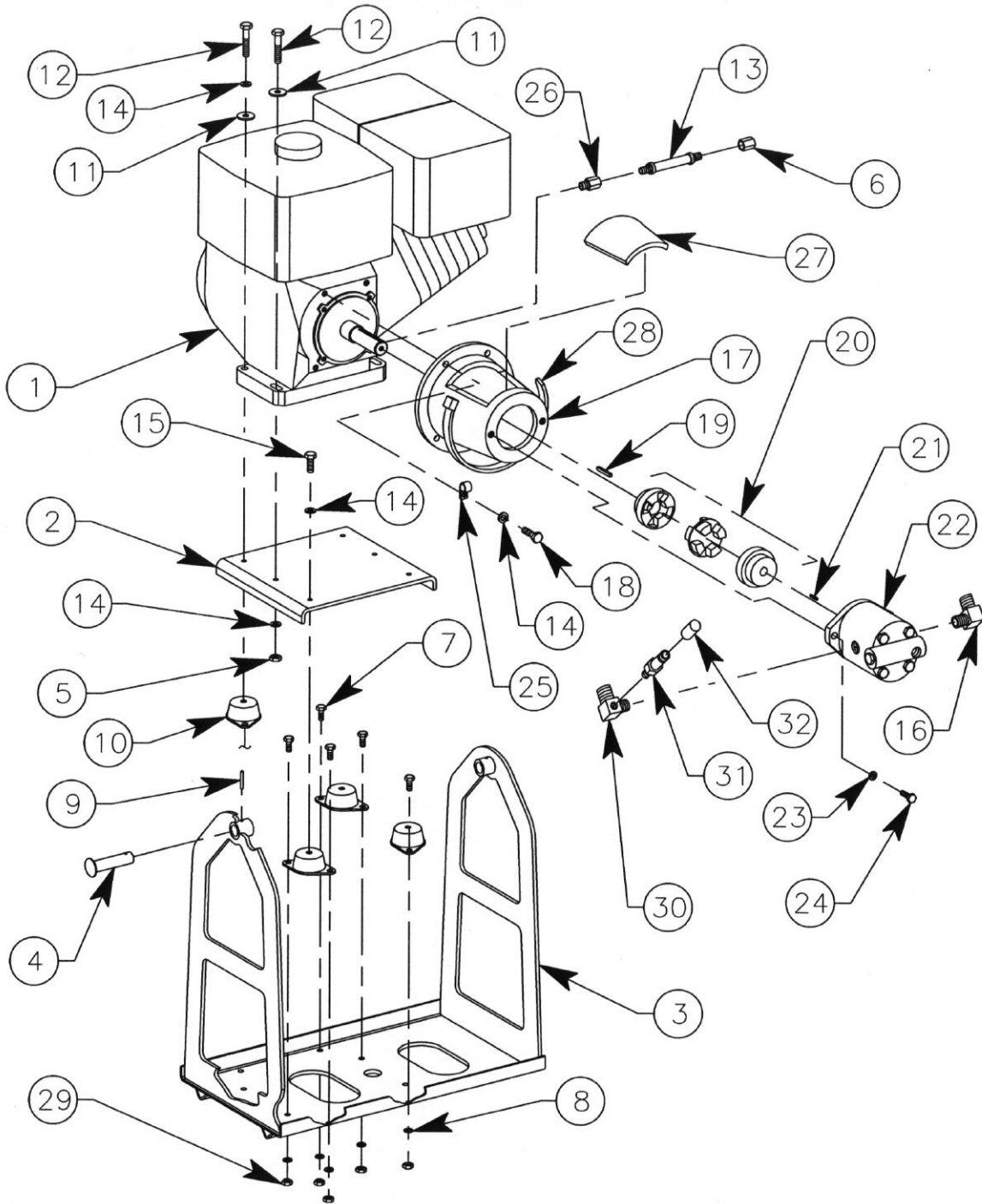
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Engine Cradle Assembly

660H And 660V DIG-R-MOBILE®

(Used Starting With Serial Number 26386)



Know what's below.
Call before you dig.

Engine Cradle Assembly 660H And 660V DIG-R-MOBILE® (Used Starting With Serial Number 26386)

REFERENCE NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	GX390T1QAA2-BLK 245432-0235-E1	Engine, Honda (13 HP) Engine, Briggs and Stratton Vanguard (13 HP)	1 (660H) 1 (660V)
2	660-0270	Plate, Engine Mount	1
3	660-0041	Engine Cradle Weldment	1
4	660-0460	Pin, Pivot	2
5	18060000	Nut, Hexagon, 3/8-16 UNC, Plated	2
6	660-0490	Cap, Female, 1/4" NPT	1
7	15050700	Screw, Cap, 5/16-18 UNC x 7/8", Grade 5, Plated	8
8	16050000	Washer, Lock, 5/16", Plated	8
9	20030900	Pin, Roll, 3/16" x 1-1/8"	2
10	660-0900	Mount, Rubber	4
11	72060000	Washer, USS Mill Carb, 3/8", Plated	4
12	15061600	Screw, Cap, 3/8-16 UNC x 2", Grade 5, Plated	4
13	660-0480	Hose, Engine Oil Drain	1
14	16060000	Washer, Lock, 3/8", Plated	6
15	15060800	Screw, Cap, 3/8-16 UNC x 1", Grade 5, Plated	2
16	660-0801	Adapter, 90°, "O"-Ring	1
17	660-0330	Mount, Pump To Engine (Serial Number 26386 To 26912)	1
	660-0331	Mount, Pump, To Engine (Used Starting With Serial Number 26913)	1
18	15061000	Screw, Cap, 3/8-16 UNC x 1-1/4", Grade 5, Plated	4
19	63040800	Key, Square, 1/4" x 1/4" x 1"	1
20	660-0341	Coupling, Pump (Used Starting With Serial Number 26913)	1
	660-0342	Coupling, Pump (Used Starting With Serial Number 26913)	1
21	63030800	Key, Square, 3/16" x 3/16" x 1"	1
22	660-0351	Pump, Hydraulic	1
23	16060000	Washer, Lock, 3/8", Plated	2
24	15061000	Screw, Cap, 3/8-16 UNC x 1-1/4", Grade 5, Plated	2
25	COV-0411	Clamp, Plated	1
26	660-0500	Adapter, Engine Oil Drain (Honda Engine Only)	1
	660-0510	Adapter, Engine Oil Drain (Vanguard Engine Only)	1
27	660-0520	Cover, Coupling	2
28	660-0540	Tie, Nylon, 21" Long	1
29	18050000	Nut, Hexagon, 5/16-18 UNC Plated	8
30	660-0710	Adapter, 90°, Modified	1
31	660-0720	Adapter, Test Port	1
32	660-0730	Cap. Dust	1



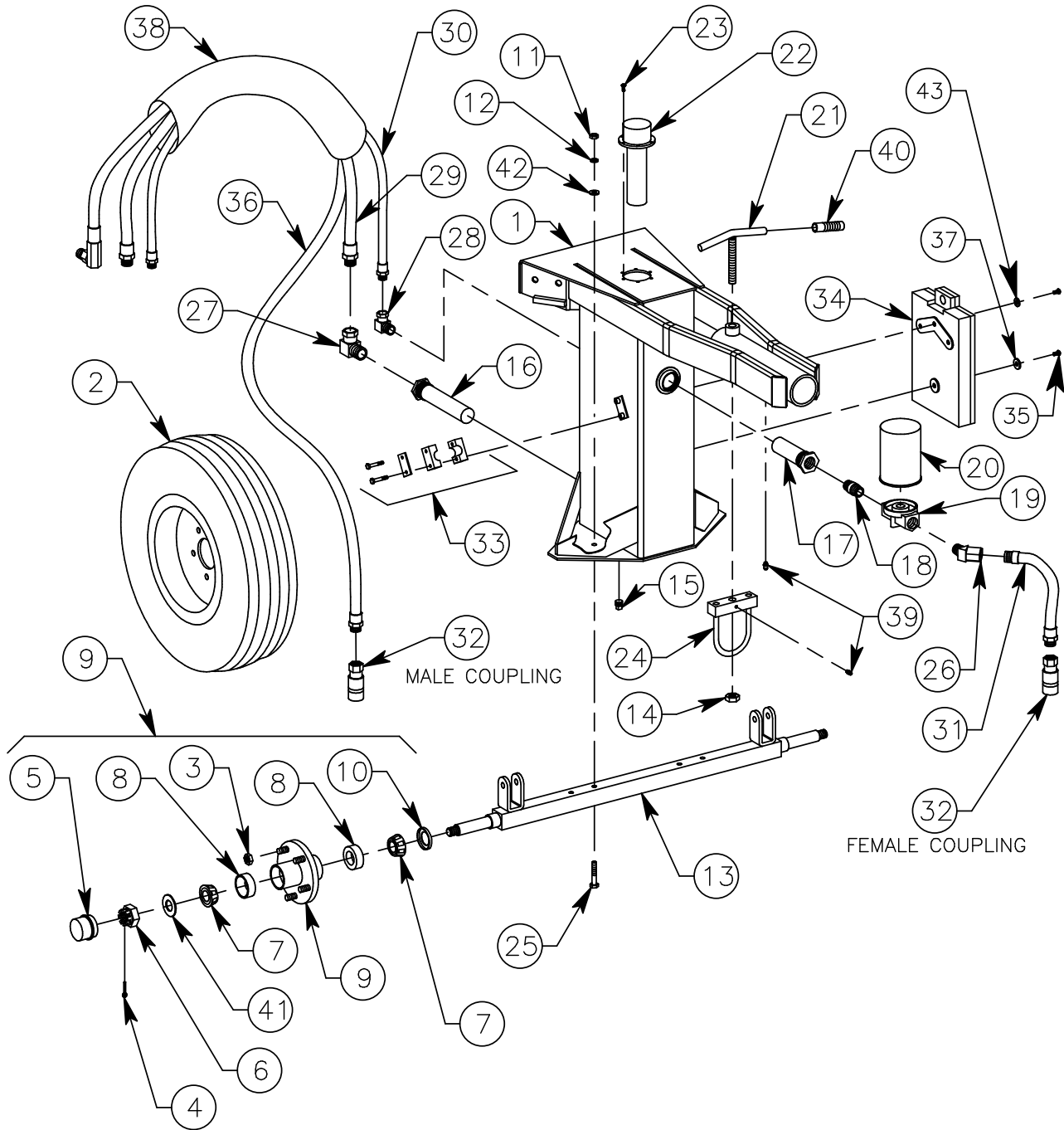
Know what's below.
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Reservoir Assembly

660H And 660V DIG-R-MOBILE®

(Serial Number 25550 Thru 26385)



Reservoir Assembly

660H And 660V DIG-R-MOBILE®

(Serial Number 25550 Thru 26385)

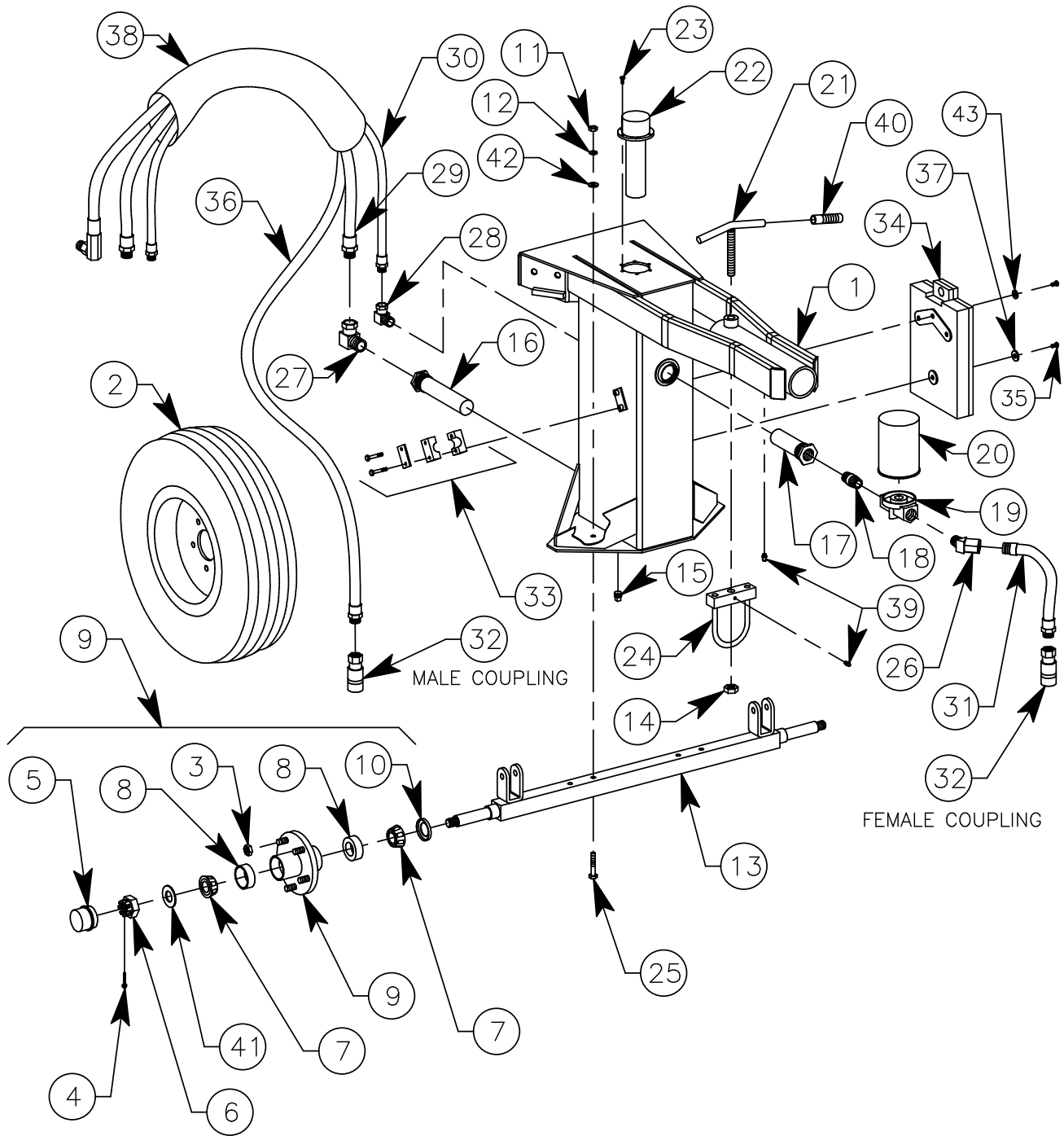
REFERENCE NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	660-0010	Frame Weldment	1
2	660-0530	Wheel And Tire Assembly	2
3	0607317	Nut, Lug (Qty 5, Included with P/N 1283202042)	10
4	2021200	Pin, Cotter, 1/8" x 1-1/2"	2
5	0615329	Cap, Dust (Qty 1, Included with P/N 1283292942)	2
6	25120001	Nut, Hex, Castle, 3/4" NF	2
7	L44643	Bearing Cone	4
8	L44610	Bearing Cup (Qty 2, Included with P/N 1283202042)	4
9	1283202042	Hub, Wheel (Includes Qty 5, P/N 0607317; Qty 1, P/N 0615329; Qty 2, P/N 144610; Qty 1, P/N 550-0090)	2
10	550-0090	Seal, Grease (Qty 1 Included with P/N 1283202042)	2
11	52060000	Nut, Hexagon, Self Locking, 2-Way, 5/8" UNC, Plated	4
12	16060000	Washer, Lock, 3/8", Plated	4
13	660-0080	Axle, Weldment	1
14	52100000	Nut, Hexagon, Self Locking, 2-Way, 5/8" UNC, Plated	1
15	26040000	Plug, Pipe, 1/4" NPT	1
16	660-0170	Strainer, Suction	1
17	660-0180	Strainer, Return	1
18	660-0300	Pipe Nipple, Close, 3/4 NPT	1
19	660-0310	Head, Filter	1
20	660-0320	Element, Filter	1
21	660-0060	Screw Weldment	1
22	660-0160	Tank, Filler-Breather	1
23	37030400	Screw, Pan Head, #10-32 UNF, Plated	6
24	660-0050	Clamp, Weldment	1
25	15061800	Screw, Cap, 3/8-16 UNC x 2-1/4", Grade 5, Plated	4
26	660-0820	Adapter, Pipe, 45°	1
27	660-0810	Adapter, Pipe, 90°	1
28	660-0840	Adapter, Pipe, 90°	1
29	660-0610	Hose Assembly (Suction)	1
30	660-0620	Hose Assembly (Pressure Relief)	1
31	660-0660	Hose Assembly (Return To Filter)	1
32	660-0670	Quick Coupling (Includes Male And Female Couplers)	Ref
33	660-0010-040	Clamp, Hose	1
34	660-0860	Case, Operator Manual	1
35	37040200	Screw, Pan Head, 1/4-20 UNC x 5/16", Plated	2
36	660-0630	Hose Assembly (Pump To Valve)	1
37	49040000	Washer, Fender, 1/4", Plated	2
38	660-0690	Sleeve, Hose Protective	26"
39	550-0590	Fitting, Grease	2
40	550-0030	Grip, Handle	2
41	17120000	Washer, Flat, 3/4", Plated	2
42	72060000	Washer, USS Mill Carb, 3/8", Plated	4
43	17040000	Washer, Flat, 1/4", Plated	1



Know what's below.
Call before you dig.



Reservoir Assembly 660H And 660V DIG-R-MOBILE® (Used Starting With Serial Number 26386)



Reservoir Assembly

660H And 660V DIG-R-MOBILE®

(Used Starting With Serial Number 26386)

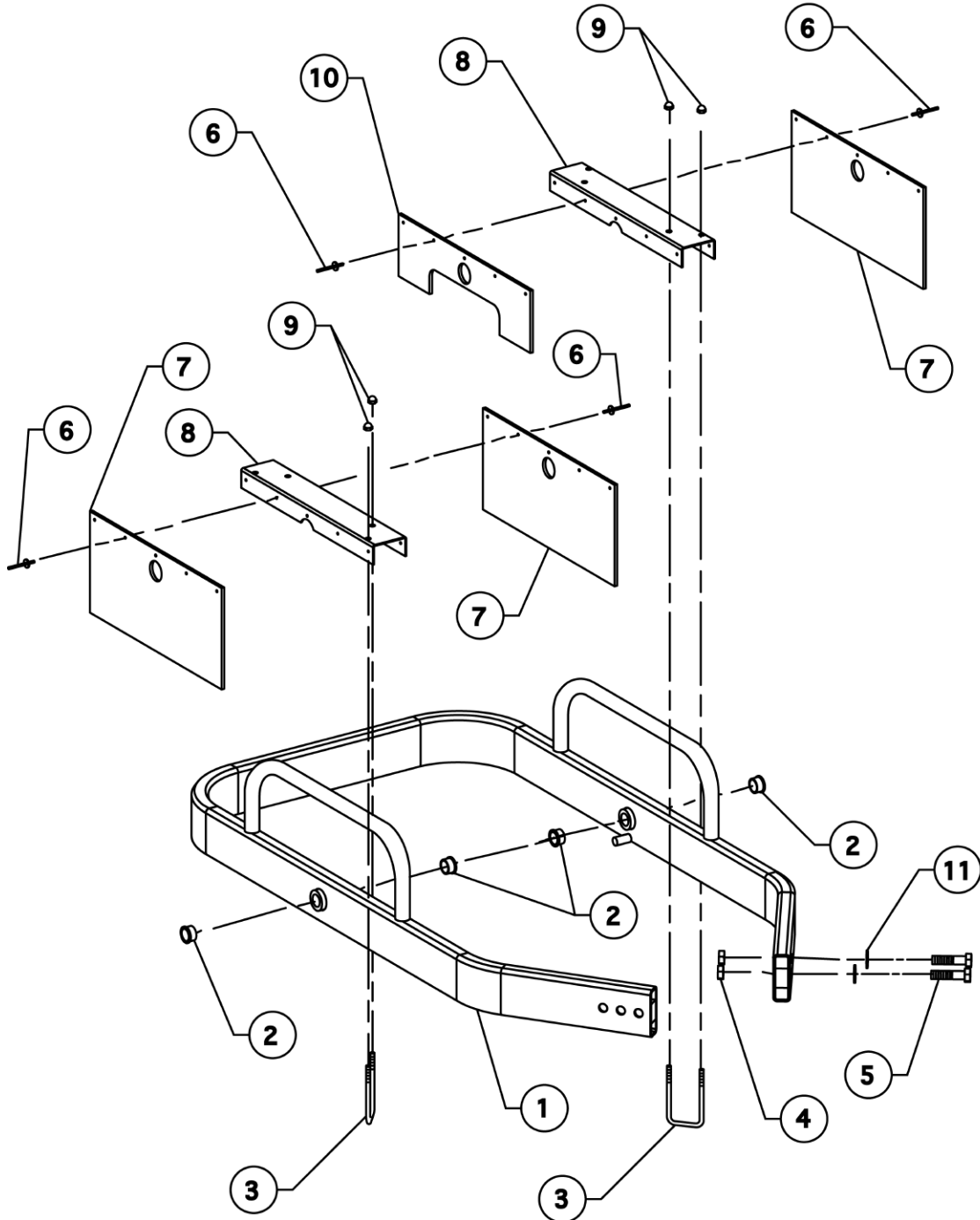
REFERENCE NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	660-0010	Frame Weldment	1
2	660-0530	Wheel And Tire Assembly	2
3	0607317	Nut, Lug (Qty 5, Included with P/N 1283202042)	10
4	22021200	Pin, Cotter, 1/8" x 1-1/2"	2
5	0615329	Cap, Dust (Qty 1, Included with P/N 1283292942)	2
6	25120001	Nut, Hex, Castle, 3/4" NF	2
7	L44643	Bearing Cone	4
8	L44610	Bearing Cup (Qty 2, Included with P/N 1283202042)	4
9	1283202042	Hub, Wheel (Includes Qty 5, P/N 0607317; Qty 1, P/N 0615329; Qty 2, P/N L44610; Qty 1, P/N 550-0090)	2
10	550-0090	Seal, Grease (Qty 1 Included with P/N 1283202042)	2
11	52060000	Nut, Hexagon, Self Locking, 2-Way, 5/8" UNC, Plated	4
12	16060000	Washer, Lock, 3/8", Plated	4
13	660-0080	Axle, Weldment	1
14	52100000	Nut, Hexagon, Self Locking, 2-Way, 5/8" UNC, Plated	1
15	26040000	Plug, Pipe, 1/4" NPT	1
16	660-0170	Strainer, Suction	1
17	660-0180	Strainer, Return	1
18	660-0300	Pipe Nipple, Close, 3/4 NPT	1
19	660-0310	Head, Filter	1
20	660-0320	Element, Filter	1
21	660-0060	Screw Weldment	1
22	660-0160	Tank, Filler-Breather	1
23	37030400	Screw, Pan Head, #10-32 UNF, Plated	6
24	660-0050	Clamp, Weldment	1
25	15061800	Screw, Cap, 3/8-16 UNC x 2-1/4", Grade 5, Plated	4
26	660-0820	Adapter, Pipe, 45°	1
27	660-0810	Adapter, Pipe, 90°	1
28	660-0840	Adapter, Pipe, 90°	1
29	660-0611	Hose Assembly (Suction)	1
30	660-0621	Hose Assembly (Pressure Relief)	1
31	660-0660	Hose Assembly (Return To Filter)	1
32	660-0670	Quick Coupling (Includes Male And Female Couplers)	Ref
33	660-0010-040	Clamp, Hose	1
34	660-0860	Case, Operator Manual	1
35	37040200	Screw, Pan Head, 1/4-20 UNC x 5/16", Plated	2
36	660-0631	Hose Assembly (Pump To Valve)	1
37	49040000	Washer, Fender, 1/4", Plated	2
38	660-0690	Sleeve, Hose Protective	26"
39	550-0590	Fitting, Grease	2
40	550-0030	Grip, Handle	2
41	17120000	Washer, Flat, 3/4", Plated	2
42	72060000	Washer, USS Mill Carb, 3/8", Plated	4
43	17040000	Washer, Flat, 1/4", Plated	1



Know what's below.
Call before you dig.



Rear Frame Assembly 660H And 660V DIG-R-MOBILE®



Rear Frame Assembly 660H And 660V DIG-R-MOBILE®

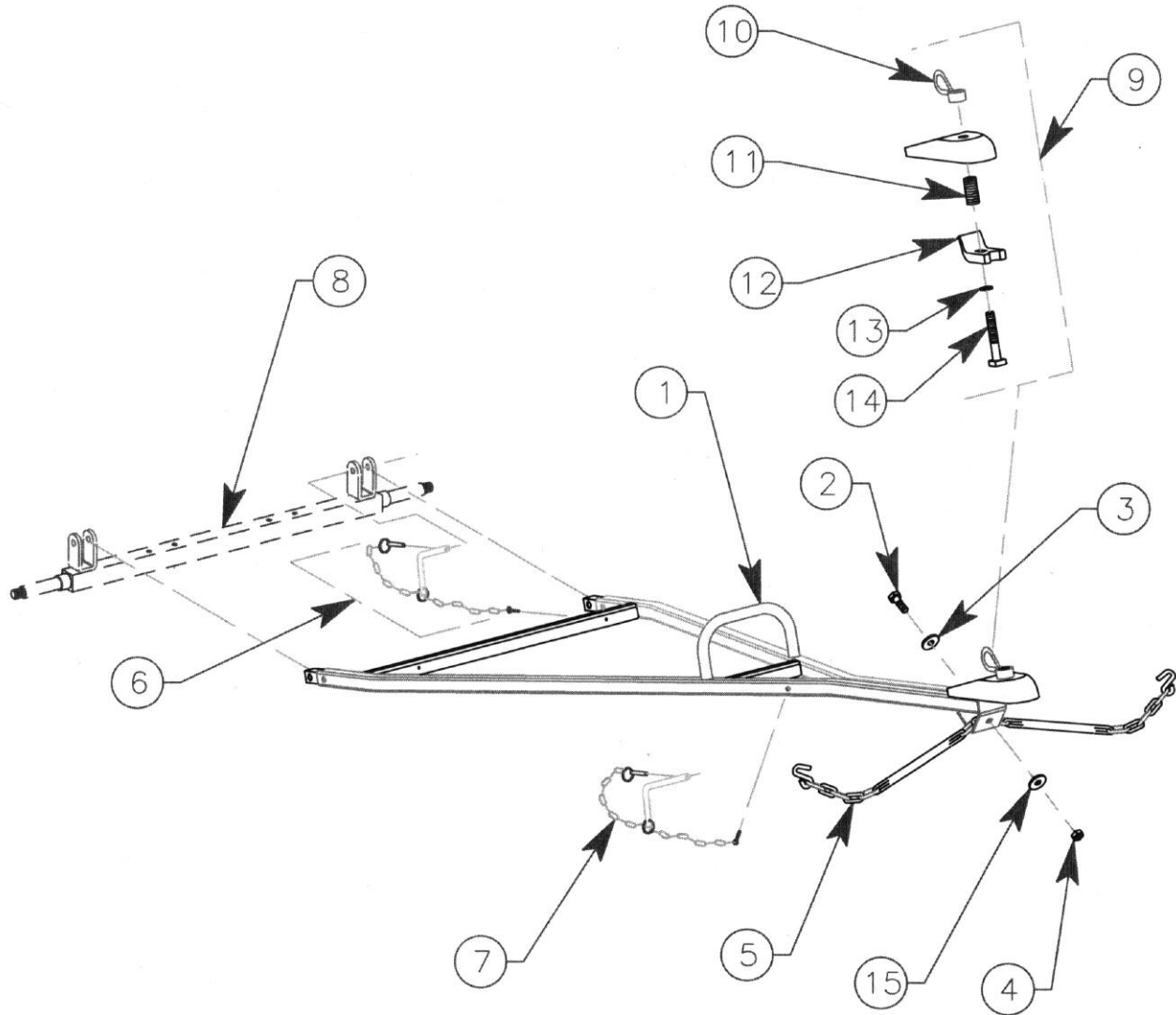
REFERENCE NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	660-0020	Rear Frame Weldment	1
2	660-0410	Bearing, Olite®	4
3	660-0260	U-Bolt	4
4	53080000	Nut, Hex, Nylock®, 1/2-13 UNC, Grade 5, Plated	4
5	15081600	Screw, Cap, 1/2-13 UNC x 2", Grade 5, Plated	4
6	67030300	Rivet, Pop, 3/16" x 3/8" Grip, Large Head, Aluminum	20
7	660-0200	Guard, Rubber, Large	3
8	660-0220	Guard, Cradle	2
9	90040000	Nut, Acorn, 1/4-20 UNC, Plated	8
10	660-0210	Guard, Rubber, Small	1
11	17080010	Washer, Special, 1/2", Plated	4



Know what's below.
Call before you dig.



Tow Bar Assembly 660H And 660V DIG-R-MOBILE®



Tow Bar Assembly 660H And 660V DIG-R-MOBILE®

REFERENCE NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	660-0070	Tow Bar (Includes Part Number H-3)	1
2	15061400	Screw, Cap, 3/8-16 UNC x 1-3/4", Grade 5, Plated	1
3	72060000	Washer, USS Mill Carb, 3/8", Plated	1
4	53060000	Nut, Hexagon, Nylock®, 3/8-16 UNC, Plated	1
5	660-0470	Chain, Safety	1
6	660-0241	Pin Assembly, Axle	2
7	660-0251	Pin Assembly, Hitch	1
8	660-0080	Axle Weldment	Ref
9	H-3	Coupler (Complete Assembly) Weld On Style	1
10	N-3	Nut, Loop	1
11	S-3	Spring	1
12	C-3	Lip, Coupler	1
13	16100000	Washer, Lock, 5/8", Plated	1
14	B-3	Bolt, Coupler, 5/8-11 UNC x 4", Plated	1
15	17060000	Washer, Flat, 3/8", Plated	1



Know what's below.
Call before you dig.



Decals [®]

660H And 660V DIG-R-MOBILE [®]

14 ON OFF

13 **WARNING**
KEEP CLEAR OF ROTATING PARTS 660-5000

12 **WARNING**
KEEP GUARDS IN PLACE 660-5000

11 **WARNING**
STOP THE ENGINE AND RELIEVE THE HYDRAULIC SYSTEM PRESSURE BY CYCLING THE DIRECTIONAL CONTROL VALVE LEVER BEFORE CONNECTING OR DISCONNECTING A QUICK COUPLER. OBSERVE ALL SAFETY AND OPERATIONAL INFORMATION IN THE OPERATOR MANUAL REGARDING THE USE OF HYDRAULICALLY OPERATED/ACTUATED COMPONENTS. 660-5060

17 **WARNING**
BEFORE HOISTING THIS MACHINE CONSULT THE APPROPRIATE HOISTING PROCEDURES IN THE OPERATOR MANUAL. IMPROPER HOISTING PROCEDURES CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY. 660-5060

7 **HYDRAULIC SYSTEM FLUID SPECIFICATIONS**
SYSTEM CAPACITY IS 5 US GALLONS (19 L). INSPECT RESERVOIR FLUID LEVEL DAILY. REMOVE DIRT AND DEBRIS FROM THE RESERVOIR FILLER AREA BEFORE CHECKING OR ADDING FLUID. MAINTAIN TO SPECIFIED LEVEL. DO NOT OVERFILL. CONTACT WITH HOT OIL CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY.
SERVICE THIS MACHINE WITH OIL CONFORMING TO API TOWARD SERVICE CLASSIFICATION 32 OR CD, CONTAINING A MINIMUM OF 0.15% ZINC ANTWEAR ADDITIVE.
THE MAXIMUM ALLOWABLE FLUID TEMPERATURE FOR HOLE DIGGING OPERATIONS IS 200° F. AT THAT TEMPERATURE WHERE THE HYDRAULIC FLUID VISCOSITY FALLS BELOW 50 SUS, THERE IS NO MAXIMUM RECOMMENDED FLUID VISCOSITY.
CONSULT THE APPLICABLE OPERATOR MANUAL FOR SPECIFIC RELATED INFORMATION. 660-5100

8 **WARNING**
RELEASE THE CLAMP PRESSURE TO ALLOW THE AUGER TO PIVOT BEFORE DIGGING. APPLY A CLAMPING FORCE AS REQUIRED TO ENHANCE AUGER STABILITY DURING THE DIGGING PROCESS. DO NOT OPERATE THIS MACHINE WITHOUT THE PIVOT LOCK RESISTING PIN PROPERLY SECURED. USE OF THIS MACHINE WITHOUT A CLAMP DEVICE AND RESISTING PIN IN AUGER OPERATING CONDITIONS CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY. 660-5000

9 **WARNING**
ROLL OVER HAZARD. SHORT TRAVEL SPEEDS, SHORT TRAVEL TIME AT ANY SPEED CAN RESULT IN THIS MACHINE BEING LAID OVER. AN OCCURRENCE CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY. MAINTAIN PROPER CONTROL OF THE TOWING VEHICLE AT ALL TIMES. DO NOT OPERATE THIS MACHINE AT SPEEDS EXCEEDING THE MAXIMUM SPEEDS LISTED FOR THE PREVAILING CONDITIONS. 660-5050

10 **WARNING**
DO NOT OPERATE THIS MACHINE IF THE REMOTE (OPERATOR POSITION) IGNITION ON/OFF SWITCH HARNESS COUPLER IS NOT PROPERLY CONNECTED. USE OF THIS MACHINE WITH AN INOPERABLE REMOTE IGNITION ON/OFF SWITCH CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY. 660-5070

6 **WARNING**
BEFORE EACH USE, INSPECT THE TOWBAR AND ATTACH POINTS FOR PROPER STRUCTURAL INTEGRITY. REPLACE ANY QUESTIONABLE OR MISSING COMPONENTS WITH PROPER REPLACEMENT PARTS. PROPERLY SECURE THE LYNCH PIN IN THE HOLES OF THE TOWBAR ATTACHMENT PIN AT THE 3 ATTACH POINTS AS SHOWN. REMOVE TOWBAR BEFORE DIGGING. DO NOT OPERATE THIS MACHINE WITH THE TOWBAR ATTACHED. CONSULT THE OPERATOR MANUAL FOR SPECIFIC INFORMATION. IMPROPER TOWBAR USE CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY. 660-5080

5 **WARNING**

4 **WARNING**
BEFORE TOWING THIS MACHINE THIS MACHINE IS EQUIPPED WITH A FLOAT TYPE CARBURETOR. WHEN NOT IN USE, TURN THE FUEL VALVE TO THE OFF POSITION TO PREVENT CARBURETOR FLOODING. FLOODING CAN RESULT IN DIRECT DAMAGE TO THE ENGINE. OTHER PROPERTY DAMAGE AND/OR PERSONAL INJURY.

15 **CUSTOMER SERVICE INFORMATION**

16 **WARNING**
BEFORE EACH USE, INSPECT HITCH COUPLER AND FASTENERS FOR PROPER TORQUE VALUE. EXCESSIVE WEAR AND/OR CORROSION. REPLACE ANY QUESTIONABLE COMPONENTS WITH PROPER REPLACEMENT PARTS. CONSULT OPERATORS MANUAL FOR SPECIFIC INFORMATION. 660-5040

18 **DANGER**
ELECTROCUTING HAZARD. MACHINE IS NOT INSULATED. INSPECT SUBSURFACE BEFORE BORING 201-5040

19 **DANGER**
KEEP BODY PARTS, LOOSE CLOTHING AND OTHER ACCESSORIES AWAY FROM ROTATING PARTS. CONTACT WITH ANY OF THESE ITEMS TO THE AUGER OR OTHER ROTATING PARTS CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY. 660-5000

22 **811**
Know what's below. Call before you dig. 01-200

20 **General**
GECD-5040

23 **WARNING**
DO NOT GO NEAR LEAKS
HIGH PRESSURE OIL LEAKS PUNCTURES SKIN CAUSING SERIOUS INJURY, SWELLING OF BLOOD.
IF INJURED, SEEK EMERGENCY MEDICAL HELP. IMMEDIATE SURGERY IS REQUIRED TO REPAIR OIL.
DO NOT USE FINGER OR OTHER BODY PARTS TO CHECK FOR OIL LEAKS.
STOP POWER SOURCE AND RELIEVE THE HYDRAULIC SYSTEM PRESSURE BY CYCLING THE DIRECTIONAL CONTROL VALVE TO THE MACHINE. 660-5060

21 **WARNING**
DO NOT GO NEAR LEAKS
HIGH PRESSURE OIL LEAKS PUNCTURES SKIN CAUSING SERIOUS INJURY, SWELLING OF BLOOD.
IF INJURED, SEEK EMERGENCY MEDICAL HELP. IMMEDIATE SURGERY IS REQUIRED TO REPAIR OIL.
DO NOT USE FINGER OR OTHER BODY PARTS TO CHECK FOR OIL LEAKS.
STOP POWER SOURCE AND RELIEVE THE HYDRAULIC SYSTEM PRESSURE BY CYCLING THE DIRECTIONAL CONTROL VALVE TO THE MACHINE. 660-5060

3 **AUGER DIRECTION CONTROL**
DEPRESS FOR REVERSE (COUNTERCLOCKWISE) DIRECTION
DEPRESS FOR FORWARD (CLOCKWISE) DIRECTION
DANGER DEPRESSING THE CONTROL LEVER CAN RESULT IN AUGER ROTATION. UNEXPECTED AUGER ROTATION CAN RESULT IN PROPERTY DAMAGE AND/OR PERSONAL INJURY. 660-5140

1 **WARNING**
DO NOT GO NEAR LEAKS
HIGH PRESSURE OIL LEAKS PUNCTURES SKIN CAUSING SERIOUS INJURY, SWELLING OF BLOOD.
IF INJURED, SEEK EMERGENCY MEDICAL HELP. IMMEDIATE SURGERY IS REQUIRED TO REPAIR OIL.
DO NOT USE FINGER OR OTHER BODY PARTS TO CHECK FOR OIL LEAKS.
STOP POWER SOURCE AND RELIEVE THE HYDRAULIC SYSTEM PRESSURE BY CYCLING THE DIRECTIONAL CONTROL VALVE TO THE MACHINE. 660-5060

Decals

660H And 660V DIG-R-MOBILE®

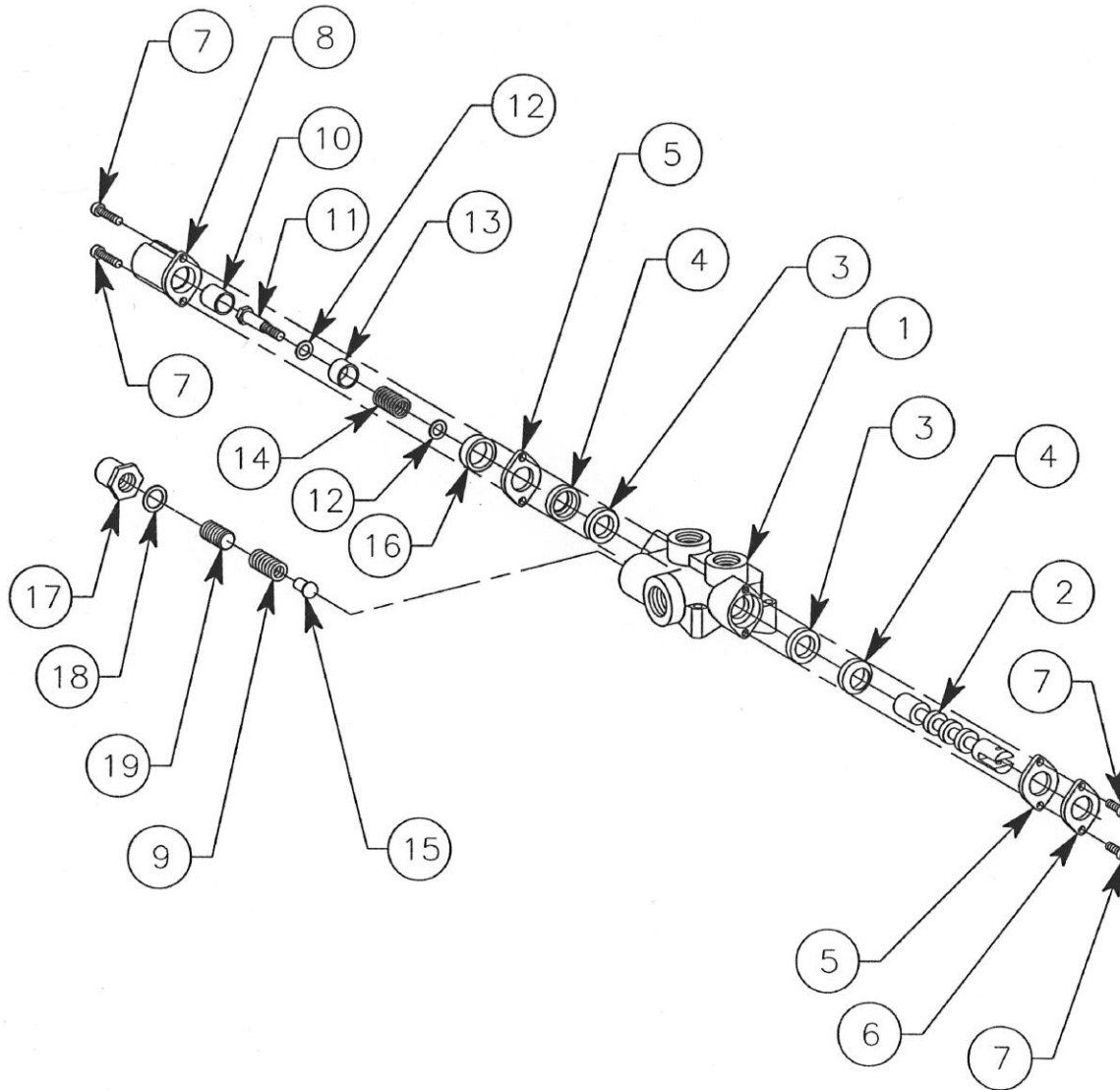
REFERENCE NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1	660-5150	Decal, Reflective	1
2	660-5160	Decal, Warning	1
3	660-5140	Decal, Control	1
4	660-5111	Decal, Warning	1
5	660-5130	Decal, Operation	1
6	660-5091	Decal, Warning	3
7	660-5100	Decal, Hydraulic Fluid	1
8	660-5081	Decal, Warning	1
9	660-5050	Decal, Warning	1
10	660-5070	Decal, Warning	1
11	660-5060	Decal, Warning	1
12	SP8-5051	Decal, Warning	2
13	SP8-5030	Decal, Warning	5
14	CS8-5070	Decal, Shut-off	1
15	SG24-5072	Decal, Assistance	1
16	660-5040	Decal, Warning	1
17	CS8-5050	Decal, Warning	2
18	201-5041	Decal, Danger	1
19	233-5093	Decal, Danger	1
20	GECD-5040	Decal, General	2
21	H-3-5000	Decal, Coupler	1
22	671-5100	Decal, 811	1
23	240-5090	Decal, Danger, Carbon-Monoxide	1



Know what's below.
Call before you dig.



Hydraulic Valve Assembly 660H And 660V DIG-R-MOBILE®



Know what's below.
Call before you dig.

Hydraulic Valve Assembly 660H And 660V DIG-R-MOBILE®

REFERENCE NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
1		Valve Body	Not Serviced
2		Spool	Not Serviced
3	660-SF304	Quad Ring	2
4	660-SF305	Wiper	2
5		Retainer, Seal	Not Serviced
6		Cover	Not Serviced
7		1/4-20 UNC x 3/4 Socket Head Capscrew	Not Serviced
8		Cap, Centering Spring	Not Serviced
9	660-B505	Spring	1
10		Spacer	Not Serviced
11		Bolt, Centering	Not Serviced
12		Washer, Steel	Not Serviced
13		Spacer	Not Serviced
14	660-SF314	Spring, Centering	1
15	660-SF361A	Poppet	1
16		Spacer	Not Serviced
17	660-SF365A	Cap, Nut	1
18	660-B5030	Washer	1
19	660-SF364A	Screw, Adjusting	1



Know what's below.
Call before you dig.

